(24,526)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1915.

No. 331.

OSHEN MANUFACTURING COMPANY, PETITIONER,

vs.

BERT A. MYERS MANUFACTURING COMPANY AND HUBERT A. MYERS.

RIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

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IN THE

UNITED STATES CIRCUIT COURT OF APPEALS

FOR THE SEVENTH CIRCUIT.

OCTOBER TERM, A. D. 1912.

No. 2027

GOSHEN MANUFACTURING COMPANY,
Appellant,

vs.

HUBERT A. MYERS MANUFACTURING COMPANY AND HUBERT A. MYERS,
Appellees.

MR. FRED L. CHAPPELL,
MR. OTIS A. EARL,
Counsel for Appellant,

MR. V. H. LOCKWOOD,
Counsel for Appellees.

Appeal from the District Court of the United States for the District of Indiana.

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CIRCUIT COURT OF THE UNITED STATES,
DISTRICT OF INDIANA,

In Equity.

THE GOSHEN MANUFACTURING COMPANY,
Complainant,
vs.
THE HUBERT A. MYERS MANUFACTURING COMPANY and HUBERT A. MYERS,
Defendants.

On Patent No. 876,991.

BILL OF COMPLAINT.

To: the Honorable, the Judges of the United States Circuit Court for the District of Indiana.

The Goshen Manufacturing Company, a corporation organized, existing and doing business under and by virtue of the laws of the state of Indiana, and a citizen of said state, having its principal place of business in the city of Goshen, in the said State of Indiana, brings this, its Bill of Complaint, against The Hubert A. Myers Manufacturing Company, a corporation organized, existing and doing business under and by virtue of the laws of the state of Indiana and having an established and regular place of business in the city of Warsaw, in the state of Indiana, and in the District of Indiana, and Hubert A. Myers, of Bryan, county of Williams, state of Ohio, and a citizen of said state, as Defendants in this suit.

And thereupon your orator complains and says, upon information and belief:

FIRST:—That your orator is a corporation, organized, existing and doing business under and by virtue of the laws of the state of Indiana.

SECOND:—That the Defendant, The Hubert A. Myers Manufacturing Company, is a corporation organized, existing and doing business under and by virtue of the laws of the state of Indiana, and that said Defendant has a regular and established place of business in the City of Warsaw, State of Indiana.

FOURTH:—That the Defendant, Hubert A. Myers, was formerly a resident of the City of Goshen, county of Elkhart, state of Indiana, but is now a resident of the city of Bryan, county of Williams, state of Ohio; that he promoted and organized, and took part in promoting and organizing The Hubert A. Myers Manufacturing Company, a corporation; that he is a large stockholder, and is actively engaged in directing and managing the affairs of the said company; and that he is a director of and holds the office of General Manager of The Hubert A. Myers Manufacturing Company.

FIFTH:—That heretofore and prior to the fourteenth day of August, 1906, the said Defendant, Hubert A. Myers, then of Goshen, Indiana, was the true, original, first and sole inventor and discoverer of certain new and useful improvements in Hoisting Pulleys fully described in Letters Patent hereafter mentioned, and which had not been used or known by others in this country, and which had not been patented or described in any printed publication in this or any other foreign country before the said Hubert A. Myers' invention or discovery thereof, or more than two years prior to his application for Letters Patent therefor, and which had not been in public use or on sale in this country for more than two years prior to his application for Letters Patent of the United States therefor, nor contrary to the Statutes of the United States in such case made and provided, and which had not been abandoned to the public.

FIFTH:—That on or about the fourteenth day of August, 1906, the said Hubert A. Myers being so as aforesaid the true, original, first and sole inventor and discoverer of the said improvements in Hoisting Pulleys, did make application in writing to the then Commissioner of Patents of the United States, for the grant of Letters Patent therefor, in accordance with the then existing Acts of Congress, and prior to the granting of Letters Patent, as hereinafter mentioned, complied in all re-

spects with the conditions and requirements of the Commissioner of Patents, in such case made and provided.

SIXTH:—That before the issuing of the Letters Patent on the before-mentioned application, the said Hubert A. Myers, by an instrument in writing, bearing date of First day of August, 1906, granted, bargained, sold, assigned, and transferred to Allen P. Boyer, of the City of Goshen, County of Elkhart, State of Indiana, all of his right, title and interest in, to and under the said application for Letters Patent and the Letters Patent of the United States to be obtained therefor, which said assignment has been duly recorded in the Patent Office of the United States as by reference to said instrument, or a duly certified copy thereof here in court to be produced, if required, will more fully and at large appear.

SEVENTH:—That on the twenty-first day of January, 1908, after due examination as to the novelty and utility of said invention and improvements and in full compliance with the Statutes of the United States in such case made and provided, Letters Patent of the United States bearing date on that day, were issued to the said Allen P. Boyer, in due form of law under the seal of the Patent Office of the United States, signed by the Commissioner of Patents, and numbered 876,991, whereby there was granted and secured to the said Allen P. Boyer, and to his successors, or assigns, for the term of seventeen years, from and after the date of said Letters Patent, the full and exclusive right and liberty of making, using and vending to others to be used, the said invention and improvements as set forth in said Letters Patent as in and by said original Letters Patent or a duly certified copy thereof here in court to be produced, if required, will more fully appear, by virtue whereof the said Allen P. Boyer became and was the sole owner of all the rights and privileges granted and secured, or intended to be granted and secured, in and by said Letters Patent.

EIGHTH: That on or about the 28th day of September, 1910, the said Allen P. Boyer, by an instrument in writing duly signed, sealed, delivered, granted, bargained, sold, assigned, and transferred all his right, title and interest in, to and under said Letters Patent No. 876,991, and in the improvements and inventions therein set forth, together with all rights and

choses in action which had accrued to him, as well as those which might accrue for infringement thereof, and all rights to sue for and recover damages or profits for the same, to your orator, as by reference to said instrument, or a duly authenticated copy thereof, here in court to be produced, if required will more fully and at large appear.

NINTH:—That by virtue of the premises your orator became and is now the sole and exclusive owner of said Letters Patent No. 876,991, and of all the rights and privileges granted and secured thereby and is entitled to sue for, collect and receive to its own use, all profits and damages arising out of the infringement of said Letters Patent.

TENTH:—That the inventions and improvements set forth in said Letters Patent No. 876,911 are of great utility and value, and that the trade and public generally acquiesced in the vadility of the said Letters Patent, and recognized the rights of your orator in and under the same, and that the inventions have, (through the efforts of your orator, it having invested and expended large sums of money and been to great trouble and expense in and about said inventions for the purpose of making them profitable to itself and of benefit to the public), gone into general use, largely superseding all other analogous devices, and that your orator is prepared to supply the demand therefor, being equipped to manufacture many thousands of hoisting pulleys each year embodying said inventions, and that, if your orator can receive lawful protection against infringers, the said Letters Patent will be of great value to your orator and great profits will accrue to your orator therefrom.

ELEVENTH:—That the said Defendants, well knowing the premises and the rights and privileges secured unto your orator, as aforesaid, but contriving to injure your orator, and to deprive it of the profits, benefits and advantages which might and otherwise would accrue to your orator from the said Letters Patent, and from the use of the inventions set forth therein and covered thereby, since the issue thereof, and before the commencement of this suit (but how long before your orator does not know), without the license and authority and against the will of your orator, and in violation of your orator's rights and in infringement of the said Letters Patent,

No. 876,991, at Warsaw, Indiana, in the District of Indiana, and elsewhere in the United States, unlawfully and wrongfully and in defiance of the rights of your orator, did make, construct, and cause to be made and constructed ,and use and vend to others to be used, large numbers of Hoisting Pulleys, which severally combine in each structure, parts and combinations of parts, elements and combinations of elements which are covered and secured unto your orator by the several claims of the said Letters Patent No. 876,991, issued on the twenty-first day of January, 1908, to Allen P. Boyer, of the United States of America, thereby infringing said Letters Patent, and your orator charges it to be a fact that the said Defendants and their conferedates still continue so to do, but to what extent the Defendants have made use of the inventions and the improvements aforesaid, and how many hoisting pulleys embracing in their construction and operation the said inventions or substantial parts thereof, your orator does not know and prays discovery thereof.

TWELFTH:—That the said Defendants have made and sold and caused to be made and sold, large quantities of such hoisting pulleys and have a large quantity on hand which they are offering for sale, and have made and realized large profits therefrom; but to what extent and how much exactly your orator does not know and prays discovery thereof.

THIRTEEN:—That the said Defendants have received and enjoyed and are still receiving and enjoying great gains, profits and advantages from the unlawful use and sale of the said inventions set forth in the said Letters Patent, which might and otherwise would have been obtained by your orator, and to which your orator is entitled; but how much exactly your orator does not know and prays discovery thereof.

FOURTEENTH:—That the use of said inventions by the Defendants and their preparation for and avowed determination to continue the same and their aforesaid and unlawful acts in disregard and in defiance of the rights of your orator have the effect to and do encourage and induce others to infringe said Letters Patent in disregard of your orator's rights.

FIFTEEN:—That the aforesaid acts and doings are all in as aforesaid, and to your orator's great and irreparable injury defiance of the rights acquired by and secured to your orator,

and loss, and by which your orator has been and is being deprived of great gains and profits which it might and otherwise would have obtained, but which have been received and enjoyed, and are being received and enjoyed, by the said Defendants by and through their unlawful acts and doings.

SIXTEENTH:—That your orator has caused notice to be given to the said Defendants of said infringement and of its rights in the premises, and requested said Defendants to desist and refrain therefrom; but said Defendants disregarded such notice and refused so to do, and still continued to make, use and vend to others to be used, hoisting pulleys containing the improvements and inventions covered and secured by said Letters Patent.

SEVENTEENTH:—That all hoisting pulleys made by your orator under said Letters Patent No. 876,991, since the issue thereof, have been duly marked as required by the Statutes in such case made and provided, with the word "patented" and the date thereof.

All of which acts, doings and pretenses are contrary to equity and good conscience, and tend to the manifest wrong and injury of your orator in the premises:

I. In consideration whereof, and forasmuch as your orator can have no adequate relief, except in this court, where matters of this nature are properly cognizable and relievable, to the end, therefore, that the Defendants may, if they can, show cause why your orator should not have the relief prayed, and may, according to the best and utmost of their knowledge, remembrance, information and belief, full, true, direct and perfect answer make to the premises, and to all of the several matters hereinbefore stated, charged and alleged, and as fully and particularly as if interrogated as to each and every of said matters, but not under oath, an answer under oath being hereby expressly waived; and may be compelled to account for and pay over to your orator profits, gains and savings by them acquired, and the damages suffered by your orator from such unlawful acts; and to account for and pay over to your orator all such profits, gains, and savings, as have accrued and arisen to or been earned or received by the Defendants, or to which your orator may be entitled by reason of said unlawful manufacture, use and sale, or causing others to manufacture, use

and sell, hoisting pulleys embodying the improvements and inventions shown, described and claimed in said Letters Patent No. 876,991, and all such gains and profits as your orator should have received but for such unlawful acts and doings of the Defendants.

II. And your orator prays that said Defendants, The Hubert A. Myers Manufacturing Company, and Hubert A. Myers, their servants, agents, attorneys, and workmen, and each and every of them, may be restrained and enjoined, provisionally and perpetually by the order and injunction of this Honorable Court, from directly or indirectly making, constructing, or causing to be made and constructed, using or causing to be used, vending or causing to be vended, delivering, working or putting into practice, operation or use hoisting pulleys embodying the said improvements or inventions described and claimed in the said Letters Patent No. 876,991, issued January twenty-first, 1908, to Allen P. Boyer, or any part or parts thereof, or any hoisting pulleys made in accordance therewith heretofore used, owned or controlled by said Defendants, or like or similar to those which they have heretofore made or in anywise counterfeiting or imitating the said inventions or any part thereof, or from in any manner infringing the said Letters Patent, or the Complainant's rights thereunder, and from aiding and abetting others in so doing in any manner or form whatever.

III. And your orator prays that a preliminary or provisional injunction may be issued out of and under the seal of this Honorable Court, enjoining and restraining the said Defendants, their servants, agents, attorneys and workmen, and each and every of them from further infringement of said Letters Patent during the pendency of this suit.

IV. And your orator prays that the said Defendants may be decreed to give unto your orator all gains and profits unlawfully obtained by it by reason of the aforesaid infringement, and the damages thereby suffered by your orator; and the costs of this suit; and that this Honorable Court shall assess the same, or cause the same to be assessed under its direction, and will increase the same in its discretion, as provided by law, and that your orator shall have such other and further relief as

to this Honorable Court shall seem meet and as shall be agreeable to equity.

V. And your orator further prays that the said Letters Patent No. 876,991 may be decreed to be valid, and your orator to be the lawful owner of the same, and the manufacture, use and sale of hoisting pulleys made in accordance with the inventions described in the said Letters Patent may be decreed to be an infringement thereof.

First: May it please your Honors to grant unto your orator the writ of injunction, as well provisional as perpetual, issuing out of and under the seal of this Honorable Court, commanding, enjoining and restraining the said Defendants, The Hubert A. Myers Manufacturing Company and Hubert A. Myers, and their servants, agents and workmen, and each and every of them, as is hereinafter in that behalf prayed.

Second: May it please your Honors to grant unto your orator the writ of subpoena issuing out of and under the seal of this Honorable Court, directed to the said Defendants, The Hubert A. Myers Manufacturing Company and Hubert A. Myers, commanding them by a certain day, to be and appear in this Honorable Court, then and there to answer the premises, and to stand to and abide by such order and decree as may be made against them.

And your orator will ever pray.

THE GOSHEN MFG. CO.
By ALLEN P. BOYER,
President.

CHAPPELL & EARL,
Solicitors and of Counsel for Complainant.
Business Address,
Chase Block,
Kalamazoo, Mich.

UNITED STATES OF AMERICA.

State of Indiana, }
County of Elkhart, } ss.

Allen P. Boyer, of the City of Goshen, County of Elkhart, State of Indiana, being duly sworn, deposes and says that he is President of The Goshen Manufacturing Company, the above-named Complainant, and that the foregoing Bill of Complaint is true, except as to matters stated to be on information and belief, and as to those matters he believes it to be true.

Deponent further states that he verily believes that Hubert A. Myers was the first, original and sole inventor of the new and useful improvements in Hoisting Pulleys set forth in United States Letters Patent No. 876,991, of January 21st, 1908, granted to deponent as the assignee of the entire interest in and to the said Letters Patent, and recited in the foregoing Bill of Complaint, and further that he verily believes that the said Complainant above-named is the lawful owner of the said Letters Patent.

ALLEN P. BOYER.

Subscribed and sworn to before me this 28th day of September, 1910.

E. E. MUMMERT,
Notary Public in and for said County and State.

My Commission expires May 10, 1913.

In the United States Circuit Court

For the District of Indiana.

The Goshen Manufacturing Company *vs.* The Hubert A. Myers Manufacturing Company, and Hubert A. Myers.	In Equity, No. 11,087.

SEPARATE ANSWER OF THE HUBERT A. MYERS MANUFACTURING COMPANY.

The separate answer of The Hubert A. Myers Manufacturing Company, one of the defendants in the above-entitled cause, to the bill of complaint of The Goshen Manufacturing Company, complainant therein.

This defendant, now and at all times hereafter saving and reserving to itself all manner of benefit or advantage of exception which can or may be had or taken to the many errors, insufficiencies and inaccuracies in said Bill of Complaint contained, for answer thereto, or unto so much thereof as it is advised it is material for it to answer, says:

1. This defendant avers that it has no knowledge, save from the Bill of Complaint, that The Goshen Manufacturing Company is a corporation duly organized and existing under the laws of the state of Indiana, and, therefore, does not admit the same; but it does admit that this defendant, The Hubert A. Myers Manufacturing Company, is a corporation organized and existing under the laws of the state of Indiana, as alleged in said Bill of Complaint.

2. This defendant admits that Hubert A. Myers took part in organizing the defendant company, The Hubert A. Myers Manufacturing Company, but it denies that the said Myers is a large stockholder thereof, or is actively engaged in directing and managing the affairs of said company, or a director, or a general manager, and, on the contrary, alleges that the said Myers has not been a director or officer in any capacity in said company since November 18, 1909, and has not been a stockholder thereof since December 17, 1909, and since said last date he has been in nowise connected with said company, or interested in the same.

3. This defendant denies that the said Hubert A. Myers was the original, first and sole inventor and discoverer of the alleged improvements in Hoisting Pulleys described and claimed in the letters patent set forth in said Bill of Complaint; and denies that the said improvement or invention had not been used or known by others in this country and had not been patented or described in any printed publication in this or any foreign country before the invention of the said Myers, or more than two years prior to his application for said letters patent; and denies that the said Hoisting Device set forth in said letters patent had not been in public use or on sale in this country for more than two years prior to his application for letters patent, or that the same had not been abandoned to the public.

4. This defendant states that it is not informed as to whether or not the said Hubert A. Myers before the issuing of the letters patent, mentioned in said Bill of Complaint, legally assigned the rights therein in and to Mr. Allen P. Boyer, or that the said Allen P. Boyer afterwards by proper instruments in writing, duly executed and delivered, transferred the same to the complainant company, but leaves the complainant to submit proof thereof.

5. This defendant further denies, upon information and belief, that the said Hubert A. Myers made application for said letters patent as set forth in said Bill of Complaint and complied in all respects with the requirements of law in the prosecution of said application, or that said letters patent were lawfully issued and delivered unto the said Boyer, or that he thereby secured to himself, his heirs or assigns, for the term of seventeen (17) years from the date of said letters patent, the exclusive right to make, use and vend said alleged invention throughout

the United States; but insists that strict proof of all of the allegations relative to the same shall be made by complainant.

6. This defendant denies that said complainant is now the sole and exclusive owner of any rights whatsoever under said letters patent, No. 876,991, or of any right to sue for, collect and receive damages and profits arising from any infringement thereof, or that the alleged invention is of great utility and value, or that the trade and public generally acquiesced in the validity of said letters patent, and recognized the rights of the complainant in and under the same, or that the complainant has invested and expended large sums of money or been to great trouble and expense in and about said invention, or that said invention has gone into general use or has largely superseded all analogous devices, or that the complainant is prepared to supply the demand therefor, or that said letters patent is, or will be, of great value to the complainant, or that great profits will accrue to it therefrom.

This defendant denies that it has either by itself or with others manufactured, sold or used, or caused to be manufactured, sold or used, any hoisting devices including or embodying any of the improvements whatsoever set forth and claimed in said letters patent, No. 876,991, or that it has in any manner infringed any of the rights of the complainant under said letters patent, or that any great or irreparable loss or injury has accrued, or will accrue, to the complainant by reason of anything heretofore done by this defendant, or that the complainant has been or is being deprived of any gains or profits to which it is lawfully entitled, by reason of any act or any manufacture, use or sale of hoisting devices by this defendant. On the contrary, this defendant alleges that it has not manufactured any hoisting device of any kind whatsoever since the month of October, in the year 1909, and that since the month of March, in the year 1910, this defendant has not sold or had for sale any hoisting devices of any sort whatsoever, and that the complainant had knowledge of these facts prior to the bringing of this suit for an injunction and it, therefore, denies the allegations in the Bill of Complaint that this defendant is still receiving and enjoying great gains, profits and advantages from the manufacture and sale of hoisting devices covered by said letters patent, and denies that it has avowed determination to continue to manufacture and sell any such hoisting devices.

7. This defendant denies, upon information and belief, that the complainant has marked the hoisting devices manufactured and sold by it with the word "PATENTED" together with the date of said letters patent, No. 876,991, as provided by law.

8. This defendant alleges that the said alleged invention set forth in said letters patent, No. 876,991, does not rise to the dignity of invention, but amounts to nothing more than the exercise of the skill of the ordinary mechanic in bringing together parts of hoisting devices long previously well known in the art; and that the alleged combinations claimed in said letters patent are not patentable combinations of parts or elements, but mere aggregations thereof brought together by the choice of the mechanic from the well known prior art and in which the separate parts perform the same functions, and only the same, as performed by said parts in the prior art.

9. The defendant denies that the alleged invention set forth in said letters patent, No. 876,991, mentioned in the Bill of Complaint, was novel at the time of the said alleged invention thereof by the said Hubert A. Myers, and says that hoisting devices substantially identical with that shown and claimed in said letters patent were shown, described and published in letters patent granted by the United States and foreign countries to the following parties on the dates mentioned and prior to the alleged invention of Hubert A. Myers, and more than two years prior to the alleged application for letters patent by the said Hubert A. Myers, and were originated and invented by the patentees as set forth in said letters patent prior to the time of the alleged invention of the said Hubert A. Myers:

No. Re. 7,681 to Garrett Van Sickle, Patented May 15, 1877.
No. 48,034 to P. J. Jamet, Patented May 30, 1865.
No. 59,874 to J. S. Tibbets, Patented November 20, 1866.
No. 77,629 to A. D. Manley, Patented May 5, 1868.
No. 95,971 to B. Bellair, Patented October 19, 1869.
No. 231,966 to T. W. R. McCabe, Patented September 7, 1880.
No. 334,614 to W. G. Ricker, Patented January 19, 1886.
No. 349,538 to L. D. Spragg, Patented September 21, 1886.
No. 357,641 to J. Swalwell & J. Moore, Patented February 15, 1887.
No. 379,113 to C. J. Hibberd, Patented March 6, 1888.
No. 389,155 to A. M. Kerr, Patented September 4, 1888.

No. 395,113 to C. F. Batt, Patented December 25, 1888.
No. 471,308 to J. Farrell, Patented March 22, 1892.
No. 473,093 to B. R. Sockman, Patented April 19, 1892.
No. 485,504 to R. B. Meeker, Patented November 1, 1892.
No. 497,731 to B. R. Sockman, Patented May 16, 1893.
No. 530,232 to W. Louden, Patented December 4, 1894.
No. 565,699 to J. Spencer, Patented August 11, 1896.
No. 593,588 to J. W. Kincaid, Patented November 16, 1897.
No. 594,801 to J. W. Kincaid, Patented November 30, 1897.
No. 688,678 to R. Paxson, Patented December 10, 1901.
No. 717,410 to J. W. Johnson & W. W. Scarborough, Patented December 30, 1902.
No. 729,968 to F. W. Smith, Patented June 2, 1903.
No. 734,733 to J. H. Moss, Patented July 28, 1903.
No. 809,815 to H. Koorie, Patented January 9, 1906.
No. 848,905 to G. M. Jenson, Patented April 2, 1907.

And other letters patent granted by the United States and foreign countries, the names and dates and numbers of which are not now known to this defendant, but which this defendant is making diligent efforts to ascertain, and when ascertained, asks leave of the court to embody in this answer by way of amendment.

10. This defendant further says, upon information and belief, that hoisting devices containing the improvements in all substantial and patentable respects similar to the alleged improvements claimed in said letters patent, No. 876,991, were known to and publicly made, sold and used in the United States by many persons prior to the said alleged invention by the said Hubert A. Myers, and more than two years prior to the date of his application for said letters patent, particularly by the following persons and at the following places, to-wit:

The Louden Manufacturing Company, of Fairfield, Iowa, at Fairfield, Iowa.

Mr. William Louden, of Fairfield, Iowa, at Fairfield, Iowa.

The Whitman & Barnes Co., of Chicago, Ill., at Chicago, Ill.

The Hunt, Hilman & Ferris Co., of Ottawa, Ill., at Ottawa, Ill.

And other persons, firms and corporations whose names and addresses are not now known to this defendant, but which this defendant is making diligent efforts to ascertain, and when ascertained, asks leave of the Court to embody in this answer by way of amendment.

11. This defendant further says, upon information and belief, that the alleged invention set forth and claimed in the letters patent, No. 876,991, was actually abandoned by the said Hubert A. Myers prior to his application for letters patent therefor.

12. This defendant, further answering, says that, as appears from the files and records of the United States Patent Office, showing the proceedings had with reference to the application for the said Myers patent in suit, the complainant is estopped by reason of actions had with reference to the said application while pending in the Patent Office, from claiming any interpretation or construction of the claims of the said Myers patent broad enough to cover a mechanism or device other than precisely the specific form shown and described in the said patent.

13. This defendant further says that the said Hubert A. Myers was not the original and first inventor and discoverer of a material and substantial part of the device set forth and claimed in said letters patent, No. 876,991; and that neither the said Hubert A. Myers nor said complainant has ever filed in the United States Patent Office any disclaimer thereof to the great injury of this defendant and the public generally.

All of which statements and defenses this defendant is ready to aver, maintain and prove as this Honorable Court shall direct, and prays hence to be dismissed with its costs most wrongfully sustained.

THE HUBERT A. MYERS MANUFACTURING CO.,
By DAVID A. PETERSON,
President.

V. H. LOCKWOOD,
Solicitor and Counsel for Defendant.

State of Indiana, County of Kosciusko, ss:

On this 3d day of December, 1910, before me, personally appeared David A. Peterson, president of The Hubert A. Myers Manufacturing Company, to me well known, and made oath that he has read the foregoing answer subscribed by him, and knows the contents thereof, and that the same is true of his knowledge, except as to matters which are therein stated to be based on information and belief, and that as to those matters he believes it to be true.

ANDREW G. WOOD,
Notary Public.

Commission expires February 22, 1911.

IN THE UNITED STATES CIRCUIT COURT,

For the District of Indiana.

The Goshen Manufacturing Company, vs. The Hubert A. Myers Manufacturing Company and Hubert A. Myers.	No. 11,087. In Equity.

AMENDMENT TO ANSWER.

The defendant company, The Hubert A. Myers Manufacturing Company, hereby amends its answer by adding to the list of patents in paragraph 9 thereof, the following:

No. 461,316 to J. T. Burr, Patented October 13, 1891.
No. 631,896 to Wm. Louden, Patented August 29, 1899.
No. 833,780 to A. P. Boyer, Patented November 13, 1906.
No. 876,933 to A. P. Boyer, Patented January 21, 1908.
No. 878,335 to A. P. Boyer, Patented February 4, 1908.

V. H. LOCKWOOD,
Solicitor for Defendant Company.

IN THE UNITED STATES CIRCUIT COURT,

For the District of Indiana.

The Goshen Manufacturing Company, vs. The Hubert A. Myers Manufacturing Company and Hubert A. Myers.	No. 11,087.

STIPULATION.

It is hereby stipulated and agreed by and between the parties hereto, through their counsel, that the answer of the defendant may be amended by adding to the list of patents in Paragraph No. 9 thereof, the following:

"No. 601,291 to D. L. Tschantz, Patented March 29, 1898."

CHAPPELL & EARL,
Solicitors for Complainant.
V. H. LOCKWOOD,
Solicitor for Defendant Company.

March 4, 1911.

UNITED STATES CIRCUIT COURT,

For the District of Indiana.

The Goshen Manufacturing Company, *Complainant,* *vs.* The Hubert A. Myers Manufacturing Company and Hubert A. Myers, *Defendants.*	In Equity No. 11,087.

REPLICATION.

This replicant, saving and reserving itself all and all manner of advantage of exception to the manifold insufficiencies of the said answer, for replication thereunto saith, that it will aver and prove its said bill to be true, certain and sufficient in the law to be answered unto; and that the said answer of the said Defendants is uncertain, untrue, and insufficient to be replied unto by this replicant, without this, that any other matter or thing whatsoever in the said answer contained, material or effectual in the law to be replied unto, confessed and avoided, traversed or denied, is true; all which matters and things this replicant is and will be ready to aver and prove, as this Honorable Court shall direct; and humbly prays, as in and by its said bill it hath already prayed.

CHAPPELL & EARL,
Solicitors for Complainant.

Kalamazoo, Michigan,
December 28, 1910.

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UNITED STATES CIRCUIT COURT,

District of Indiana.

The Goshen Manufacturing Company, *Complainant,* *vs.* The Hubert A. Myers Manufacturing Company and Hubert A. Myers, *Defendant.*	In Equity No. 11,087.

REPLICATION TO SEPARATE ANSWER OF HUBERT A. MYERS.

This replicant, saving and reserving unto itself all and all manner of advantage of exception to the manifold insufficiencies of the said answer, for replication thereunto saith, that it will aver and prove its said bill to be true, certain and sufficient in the law to be answered unto; and that the said answer of the said Defendant is uncertain, untrue and insufficient to be replied unto by this replicant, without this, that any other matter or thing whatsoever in the said answer contained, material or effectual in the law to be replied unto, confessed and avoided, traversed or denied, is true; all which matters and things this replicant is and will be ready to aver and prove, as this Honorable Court shall direct; and humbly prays, as in and by its said bill it hath already prayed.

CHAPPELL & EARL,
Solicitors for Complainant.

Kalamazoo, Michigan,
October 10th, 1911.

UNITED STATES CIRCUIT COURT,

District of Indiana.

The Goshen Mfg. Co.,
Complainant,
vs.
The Hubert A. Myers Mfg. Co., and Hubert A. Myers,
Defendants.
} Equity No. 11,087.

STIPULATION.

It is hereby stipulated and agreed by and between the Complainant and the Defendant, Hubert A. Myers, that the testimony heretofore taken and stipulations as to testimony heretofore made, may stand in this case as though made subsequent to the filing of the replication to the individual answer of the said Defendant Myers.

CHAPPELL & EARL,
Solicitors for Complainant, Hubert A. Myers,
October 14th, 1911.

UNITED STATES CIRCUIT COURT,
DISTRICT OF INDIANA.

THE GOSHEN MANUFACTURING COMPANY,
Complainant,
vs.
THE HUBERT A. MYERS MANUFACTURING COMPANY and HUBERT A. MYERS,
Defendants.

In Equity
No. 11,087.

STIPULATION.

In the above-entitled case, for the purpose of saving expense and in order to facilitate the taking of testimony, it is hereby stipulated and agreed by and between the solicitors for the above-named Defendants and the solicitors for the above-named Complainant, as follows:

First: That either party may take its or their testimony respectively, before any Notary Public or other competent officer authorized to administer an oath, at the place where said testimony is taken, the same to stand with the same force and effect as if taken under the 67th Rule in Equity as amended, or under the Federal Statute in such case made and provided; such testimony to be taken orally and in writing upon questions and answers, and upon reasonable notice of not less than five days, identifying the time and place of taking said testimony.

Second: That printed patent office copies of patents may be used by either party in place of certified copies.

Third: That certified copies of any and all assignments shall be evidence of the transfers therein described, subject, however, to examination and corrections, if any.

Fourth: That copies of articles of incorporation shall be

received and have full force and effect as the certified copies or originals, subject to examination and correction, if any.

Fifth: That certified copies of the proceedings of any court of record or any proceeding or matters of record in the Patent Office can be used as evidence in this case.

Sixth: That each party shall furnish to the other a copy of all its oral testimony taken.

Seventh: That said testimony shall be taken, as far as practicable, upon a typewriter and copies taken thereof at the time of the testimony.

Eighth: That each party may retain its own exhibits until the hearing of the case, such exhibits, however, being subject to proper possession and use thereof by said opposite party.

Ninth: That the time for taking proofs may be extended to and including July 1, 1911.

Dated this 20th day of March, 1911.

CHAPPELL & EARL,
Counsel for Complainant.
V. H. LOCKWOOD,
Counsel for Hubert A. Myers Manufacturing Company.

UNITED STATES CIRCUIT COURT,
DISTRICT OF INDIANA.

In Equity, No. 11087.

THE GOSHEN MFG. CO., Complainant,
vs.
THE HUBERT A. MYERS MFG. CO. and HUBERT A. MYERS, Defendants.

Suit on MYERS Patent No. 876,991.

PRIMA FACIE PROOFS ON BEHALF OF COMPLAINANT.

Testimony on behalf of Complainant taken pursuant to consent of counsel before Luella G. Greenfield, a Notary Public acting as Special Examiner at the office of Chappell & Earl, in the City of Kalamazoo, Michigan, beginning March 27th, 1911, at 11:30 o'clock.

Present: Fred L. Chappell on behalf of Complainant.
V. H. Lockwood, for the Defendant, The Hubert A. Myers Mfg. Co.

Testimony of Mortimer E. Cooley.

Mortimer E. Cooley, having been first duly sworn, deposed on behalf of Complainant and testified as follows in response to interrogatories by Mr. Chappell:

Q. 1. State your name ,age, residence and occupation?

A. Mortimer E. Cooley; fifty-five years of age; Ann Arbor, Michigan; Mechanical Engineer, Prof. of Mechanical Engineering and Dean of the Department of Engineering in the University of Michigan.

Q. 2. Please state your training and experience that qualify you to testify as an expert in Mechanical matters, and par-

ticularly any experienec that qualifies you to testify as to hositing devices and hay carrier devices.

A. I was born and raised on a farm in Canadaigua, New York. For the first eighteen years of my life, I engaged in the ordinary pursuits of the farm and attended the district schools during the winter. I prepared for college at the Canandaigua Academy, and in 1874 was appointed a Cadet Engineer to the U. S. Naval Academy at Annapolis, Md. I was graduated in 1878, having had, what at that time was considered a very thorough course in mechanical engineering. I served for two years at sea, performing the duties of an assistant engineer in charge of the machinery on board of ship, and then was ordered to the bureau of steam engineering at the Navy Department, Washington, where I engaged in designing machinery.

In 1881 I was detailed by the Navy Department to teach steam engineering and iron shipbuilding at the University of Michigan. I served under those orders for four years, and then on the invitation of the Board of Regents, resigned from the Navy to accept the chair of Mechanical Engineering at the University of Michigan, which position I have held ever since. For the past six years I have also served as the Dean of the Department of Engineering.

While on the farm, it fell to me to operate the various machines in use at that time on the farm, including several varieties of hay unloading devices. For many years I attended the agricultural fairs at which, in those days, farming implements were a chief feature; and I have seen a number of hay unloading devices used during the past forty years or more.

In my capacity of mechanical engineer at the University, I have been called upon to teach the subjects of mechanisms, practical work in the shops, and applied mechanics, and have also been called upon to engage in many investigations on machinery and mechanisms of various kinds. My time has been given to study and investigation of engineering topics, almost constantly for the past thirty-five years or more. I have also testified in litigation involving hay carriers, the same being in the Circuit Court for the Northern District of Ohio, Ney Mfg. Co. vs. Garver Brothers, involving Tschantz patent, No. 601,291 of March 29th, 1898.

Recess until 1:30.

Complainant's counsel offers in evidence a printed copy of U. S. Letters Patent No. 876,991, issued Jan. 21st, 1908, to Hubert A. Myers, of Goshen, Indiana, assignor to Allen P. Boyer, of Goshen, Indiana, and requests that the same be marked "Complainant's Exhibit No. 1, Patent in Suit," and the same is so received and marked. Complainant's counsel comments that the title to this patent will be shown to be in Complainant later on, the object of identifying it at this time being for the purpose of proceeding with the expert testimony.

Complainant's counsel also offers in evidence a hay carrier structure with the ropes omitted, with the request that it be marked "Complainant's Exhibit No. 2, Defendants' First Hay Carrier," and also an example of hay carrier of somewhat different structure with the request that it be marked "Complainant's Exhibit No. 3, Defendants' Second Hay Carrier," with the statement that these carriers will be identified and proved so far as possible in the case, as having been manufactured and sold by the Defendants in violation of the rights of the Complainant. They are identified at this time for the purpose of the expert testimony.

The said exhibits, Nos. 2 and 3, are received in evidence and marked as requested.

Q. 3. Will you please consider the patent in suit, and particularly the structures recited in claims, 15, 16, 17, 18, 19, 24 and 25, and compare the structures of "Complainant's Exhibit No. 2, Defendants' First Hay Carrier" and "Complainant's Exhibit No. 3, Defendants' Second Hay Carrier," indicating the similarities and differences, and whether or not you find the structures recited in the said claims embodied or substantially embodied in the said Defendants' structures. Indicate your reasons for any answers you may make, and explain the same in any way you see fit, by the use of sketches or otherwise.

A. The Complainant's patent in suit is for a hoisting pulley. It is stated in the specification that this hoisting apparatus is particularly designed for use in carriers, such as hay carriers and the like, although it is adapted and desirable for use in any relation where it is desired to lock a load in an elevated position.

It is further stated that the main object of the invention

is to provide a hoisting apparatus adapted to automatically lock the load in position.

In ordinary use, this hoisting apparatus has attached to it at the top a truck adapted to travel on a track, mounted in the peak of the building, or elsewhere, depending on the disposition of the material being handled. In operation the load is suspended underneath the hoisting apparatus and then lifted to the desired height, after which, on slacking away the hoisting rope, a clutch is automatically brought into operation, which locks the load in its elevated position. The load can then be traversed to any point desired on the track provided for the purpose. Provision is also made for tripping the apparatus when desired, so that the load can be lowered from its elevated position.

The mechanism made use of in the patent is clearly shown in Fig. 1, which is a side elevation thereof. The track from which the hoisting pulley is suspended is not shown. The Figure stops off in the members which connect the hoisting pulley to the truck.

For greater clearness in describing Complainant's apparatus, and for comparing with it the Defendants' two structures, I have prepared a sketch of Complainant's hay carrier from the patent in suit, to be designated "Complainant's Exhibit No. 4, Sketch of Complainant's Hay Carrier from the patent in suit." Only those parts which are necessary to an understanding of the mechanism of the claims in suit are shown on the sketch, and those parts bear the same reference numerals as the patent. For ease of understanding, some of the parts are also named. A few reference letters, not appearing in the patent, have been added to simplify the explanation.

As will be seen by referring to the sketch, and also to Fig. 1 of the patent drawing, the hoisting pulley 5 is mounted on an axle 4 in a frame 2. This pulley is adapted to receive a rope 20, and is provided on its sides near the periphery with laterally-projecting teeth or lugs 6 which take part in operating the clutch and locking the mechanism.

The clutch consists of a movable member 9 so mounted on radius bars 7 and 8 that it can swing down to engage the upper side of the hoisting rope. When pressure is applied, the

rope is clamped between the periphery of the pulley and this movable clutch member 9 and is held against movement.

In earlier structures in which dependence has been placed upon the mere friction on the rope between the periphery of the pulley and the face of the clutch, the locking was not always positive, and the load would sometimes cause the rope to slip. It is to insure a positive grip on the rope that the present apparatus has been devised, and it will be seen that the grip is directly proportional to the load itself, being light for a light load and heavy for a heavy load.

To accomplish this, there has been added to the movable member of the clutch 9 a pawl 10, hinged on a pin 11, and provided with a stop pin 12. When this clutch member 9 is in its upper position, as shown in the sketch, the pulley 5 is free to revolve in either direction without its teeth 6 engaging the pawl 10, but when the clutch 9 descends, the pulley is free to move clock-wise only; the lugs 6 engage the face of the pawl, slide under the pawl, as the pulley turns, this being what takes place when the load is being hoisted. But when the hoisting rope is slacked back, giving to the pulley a counter-clock-wise movement, the lugs 6 engage the face of the pawl 10, and the further downward movement of the load carries the clutch 9 down and forces it into engagement with the rope with a pressure proportional to the load itself, and the rope is thereby held against slipping.

The operation of the clutch 9 is dependent on the load itself, as will next appear. The lever 7, which is pivoted to the lower end of the clutch 9 at D, is also pivoted to the frame 2 at C, and extends to the right of this frame as shown. A link 13 is connected at its upper end to this lever 7 at B, and at its lower end to a lever 14 at A, the pivot of this lever 14 being at 15. The outer end of this lever 14 contacts with the lower face of a washer and nut at the upper end of a swivel bolt, or movable member 17, at the lower end of which one end of the hoisting rope 20 is attached through a swivel. This swivel bolt is embraced by a spring 18, and a sleeve 23, the latter limiting the downward movement of the lever 14. Thus, when the load comes onto the hoisting rope, the swivel bolt 17 descends against the spring 18 until it is stopped by the sleeve 23. At the same time the opposite end of lever 14 rises, carries with it

the link 13, which swings the lever 7 about its pivot C and causes the clutch 9 to descend to a point where the pawl 10 comes into the path of the lugs or teeth 6 at the periphery of the pulley 5. As previously explained, while the load is being hoisted, the pawl 10 slides over the teeth 6, and when the rope is slacked off, its downward movement causes the teeth 6 to engage with the pawl to force the clutch 9 into close contact with the rope which is jammed between it and the groove of the pulley and held against further movement.

To release the load, it is hoisted slightly, which loosens and raises the clutch 9, and then by applying a pull to the trip rope at the opposite end of the lever 7, the clutch 9 can be raised to a point at which the pawl 10 will not engage the teeth 6 and the load can be lowered.

A spring 16 is connected at one end to the link 13 and at the other end to the frame of the pulley and serves to restore the parts to their normal position, as shown in the sketch, when the load has been released from the hoisting rope. The spring 18 also takes part in this restoring operation, by forcing the swivel bolt to its upper position and releasing the pressure on the outer end of the lever 14.

The operation of the clutch is seen to be entirely automatic, both on being thrown into and out of engagement when the load is picked up and released. The only manual operation involved is when it is desired to lower the load without releasing it, and then the trip rope comes into play, as explained.

We will next consider "Complainant's Exhibit No. 2, Defendants' First Hay Carrier." To assist in the description of this hay carrier, I have prepared a sketch, to be designated "Complainant's Exhibit No. 5, Sketch of Defendants' First Hay Carrier." In this sketch only those parts are shown which take part in the operations brought about by the mechanism of the claims in suit. Each part is given the reference numeral of the corresponding or equivalent part of the patent in suit; and in addition, reference letters are used to designate parts corresponding to those shown in the sketch of Complainant's hay carrier from the patent in suit.

The Defendants' first structure is seen to comprise a pulley 5 with teeth 6, mounted in a frame 2 on the spindle 4. The pawl 10 extends across the upper part of the frame, being

pivoted at 11. The clutch member 9 is also pivoted at the same point 11. This is a triangular shaped clutch, with one face adapted to engage the rope. It has a slight movement on its pivot. The clutch member 9 and the pawl 10 are adapted to swing over towards the face of the pulley, their common pivot 11 being mounted in a slot 8 carried by the opposite sides of the frame.

A link 13 is connected at its upper end to the lever 7 at B, and at its lower end to the swivel bolt 17 at A. This link is U-shaped, and connection is made to the bolt 17 by means of a hole in the bottom of the U which drops over the upper end of the bolt.

One end of the hoisting rope is attached to the eye of the swivel bolt, and this bolt is held in its upper position, when there is no load on the rope, by the spring 18. A sleeve 23 is provided to limit the downward movement of the swivel bolt. The swivel bolt and its connections are seen to be almost identical with those in the patent.

In operation, when a load is being hoisted, the swivel bolt is pulled down against its spring, dropping the link 13 and with it the lever 7. Thus the pawl 10, which is a part of the lever 7, drops into the path of the teeth 6 on the pulley 5. The pulley is free to move clock-wise while the load is being hoisted, but when slacked off, the teeth engage the pawl, carrying it to the left and with it the lever 7 and the clutch 9, which is forced against the rope, and is thus held with a pressure directly proportional to the load itself. The clutch in its movement to the left is guided by the slot 8 and has some freedom of movement on its pivot, and thus adjusts itself to the curve of the rope. When the load is released, the spring 18 forces the swivel bolt back into its normal position, as shown, raises the lever 7 and carries the pawl 10 above the path of the teeth 6, after which the pawl, the lever and the clutch and the upper end of the link 13 are all carried back into their normal position by the spring 16.

A trip lever is shown in dotted lines near the bottom of the frame, being fulcrumed at c, and having a trip rope attached at t. The opposite end is forked to embrace a pin d on the link 13. When it is desired to lower the load without releasing it from the slings, the load is first hoisted slightly,

which releases the teeth 6 from the pawl 10. A pull then applied to the trip rope will force the link 13 upward and with it the lever 7 to completely disengage the pawl from its teeth. The clutch will then move to the right under the tension of the spring 16, and the rope being freed, the load can be lowered.

Comparing this Defendants' first hay carrier with the structure of the patent in suit. The pulley, with its lugs 6, the swivel bolt 17, spring 18, and sleeve 23, are seen to be substantially the same. The Defendants' sleeve 23 is inside of the spring, whereas the Complainant's is outside the spring, but this is not material, both sleeves serving to stop the downward movement of the swivel bolt at a desired point. The Defendants' link 13 is connected at its bottom end directly to the top of the swivel bolt at A, whereas in the Complainant's patent this link is connected to the end of a lever 14, which is interposed between the link and the swivel bolt. Inasmuch as the object of this lever 14 is merely to secure a reversal of movement, its omission from the Defendants' structure is not material, a reversal of movement not being necessary in the Defendants' structure, as the parts are mounted. The Defendants' lever 7 instead of being pivoted at or near its middle point, as in the Complainants' patent, is pivoted at one end; and the link 13 is so connected to this lever 7, with respect to its pivot, that the downward movement of the swivel bolt causes the downward movement of the pawl, which is a part of the lever 7, directly. Thus the pawl is brought into position to engage the teeth on the face of the pulley, without the necessity of reversing the movement of the link 13, of the patent in suit, which is brought about by the interposed lever 14. Therefore, while the two structures differ in form and arrangement of parts, they are seen to operate in substantially the same way and to bring about the same result.

To secure an adjustment of the clutch member 9 on the rope, it is provided with a slight pivotal movement, and its pivot moves in the slot 8, whereas in the Complainant's patent, the adjustment of the clutch 9 is brought about through the radius members 7 and 8. The Defendants have substituted a sliding movement for the Complainant's swinging movement, but, as is well known, these devices have long been used interchangeably in guiding the movements of parts of machin-

ery, and, therefore, they are not different mechanical devices in any material sense.

The Defendants' pawl 10, which is an extension of the lever 7, is seen to be fulcrumed coincidently with the lever and the clutch 9, whereas in the Complainant's patent, it is separately mounted on the clutch member 9 itself; but when we come to discuss the Defendants' second hay carrier, these two forms of pawls will be shown to be substantially alike.

The Defendants' spring 16 is connected at one end to the frame of the carrier and at the opposite end to a point on the lever 7 to the left of the pawl 10, whereas in the Complainant's patent, one end is connected to the frame and the opposite end to the link 13, but this difference is seen not to be material, as the object of the spring is to restore the parts to normal position when the load is released, and it is accomplished in both devices in substantially the same way.

The Defendants use a separate trip lever, which acts directly on the link 13, whereas in the Complainant's patent, this trip lever is an extension of the lever 7. In operation, a pull on the trip rope in both devices lifts the pawl out of engagement with the teeth on the pulley, one through the link 13 and lever 7, and the other directly through the lever 7, but this is not a material difference, as in the Defendants' structure the link 13 has served merely to convey the effect imparted to the trip lever to the lever 7, its function being to impart movement to the lever 7, and through it the pawl 10.

As thus explained, it is seen that the defendants' first hay carrier contains all the parts of the Complainant's hay carrier as found in the patent in suit, either identically or by mechanisms which are the substantial equivalents of those appearing in the patent, as they operate in substantially the same way and accomplish the same results.

We will next consider the "Complainant's Exhibit No. 3, Defendants' Second Hay Carrier." To aid in the description of this device, I have prepared a sketch, to be designated "Complainant's Exhibit No. 6, Sketch of Defendants' Second Hay Carrier." In this sketch only the essential parts have been shown,—those which correspond to the mechanism of the Complainant's structure embodied in the claims in suit. These parts have been given the same reference numerals, and

letters, as they were used to designate the corresponding parts in the Defendants' first hay carrier, the reference numerals being those appearing in the patent in suit.

The explanation of the Defendants' second hay carrier will be shortened somewhat by comparing it with the Defendants' first hay carrier, and pointing out the resemblances and the differences. The pulley 5 with its lugs 6 is seen to be mounted in a frame on a spindle 4, there being no difference in these parts except that the lugs 6 are seen to be in the form of pins projecting from the face of the pulley near its periphery.

The pawl 10 and clutch 9 are located in the upper part of the frame in the same relative position. The shape of these parts has been changed somewhat. The same use is made of a common pivot for the clutch and the pawl, as before. The clutch itself is formed integrally with the pawl, and has not the slight movement on its pivot found in the earlier structure. Use is made of the same slot 8 in which the common pivot 11 of the clutch 9, and lever 7, and pawl 10 slides, when the clutch moves over to the left to engage the rope. There is also the same link 13 connected at its upper end to the lever 7 at the point B.

The mechanism in the lower part of the frame differs from that of Defendants' first hay carrier in the following respects: A weight 18 has been substituted for the spring 18. It is seen to be formed with its lever lying along the bottom of the frame, this lever being fulcrummed at 15. The swivel connection of the hoisting rope is at 17 close alongside of the fulcrum, on the opposite side from the weight. Thus, when the load is applied, the pull on the rope 20 raises the weight over its fulcrum 15. The weight lever is extended to the right beyond the fulcrum and is provided at its end with a U-shaped slot in which the lower pin A of the link 13 rests. A projection p extends out from the lower end of the link 13, which is adapted to coact with a part q of the frame.

In operation, when the load is hoisted, the right hand end of the lever 14 is depressed about the pivot 15, the weight 18 being raised. The link 13 drops and with it the lever 7 and pawl 10, the latter into the path of the pin 6 on the face of the pulley. Thus, when the hoisting rope is slacked back, these pins engage the pawl and carry the clutch, guided by the

slot 8, over into engagement with the rope, which is thereby firmly gripped with a pressure directly proportional to the load itself. On releasing the load, the weight 18 drops, carries the link 13 upwardly and with it the pawl 10 out of engagement with the pins 6; the projection **p** comes into contact with the frame at **q**, so that the upper end of the link 13 is thrown to the right, thereby restoring the clutch and pawl to their original and normal position.

Should it be desired to lower the load without releasing it from the slings, the hoisting rope is moved ahead far enough to disengage the pawl from the pins, after which, by pulling down on the trip rope, the weight 18 is depressed, the link 13 is elevated, the disengagement of the pawl completed, and the parts are restored to their normal position; or they are moved sufficiently to permit the load to be lowered.

Comparing this structure with the structure of the patent in suit, the weight in the lower part of the frame is seen to take the place of the spring 18, these being equivalent devices. The spring 16 of the Complainant's patent also finds its equivalent in the same weight, the object of this spring being to restore the parts to their normal position, this being accomplished in the Defendants' structure by the weight. The Defendants' second hay carrier has the lever 14 of the patent, it being merely a lever of a different order from that of the patent. The lever 7 of the patent in suit appears as that part of the Defendants' structure embracing the clutch 9 and pawl 10, its pivot C being, instead of near the middle, at one end of the lever. The fact that in the Defendants' second hay carrier, the link 13 moves in a different direction, is not material, being, as explained, in connection with Defendants' first hay carrier, merely a reversal of parts.

We thus find in the Defendants' second hay carrier, all of the parts of the hay carrier of the Complainant's patent in suit, either identically or by mechanisms which are substantially like those appearing in the patent, as they operate in substantially the same way to accomplish the same results.

It remains to consider the Complainant's and Defendants' clutch mechanisms, with special reference to the pawls. To assist in understanding these mechanisms, I have prepared two sets of sketches, one set to be designated as "Complainant's

Exhibit No. 7, Sketches of Complainant's Clutch and Pawl," the other as "Complainant's Exhibit No. 8, Sketches of Defendants' Clutch and Pawl." One set of sketches will serve for both the Defendants' first and second structures, as the pawl action of both is the same.

As has been explained, the Complainant's pawl moves about a pivot 11. When engaged to lock the clutch, the stem of this pawl presses against the pin 12. Two positions of the pawl are shown in the diagrammatic sketch, one engaging the tooth 6, and the other, in dotted lines, passing the tooth 6. When the clutch is locked, the pressure of the tooth 6 on the pawl is in the diretcion **a-b.** As a result of this pressure, at **b,** the stem of the pawl presses against the pin 12 in the direction **c-a.** By drawing the line **b-c,** we will have a triangle of forces **a-b-c,** in which the pressure against the face of the pawl will be measured by **a-b,** and the pressure against the pin 12 will be measured by **c-a.** The line **c-b** will represent the resultant of these two pressures, and measure the total pressure on the pin 11.

In the Defendants' structure, the pawl swings about a pivot 11, which, as shown in the diagrammatic sketch of Defendants' pawl, corresponds to a location in what is the stem of Complainant's pawl. Two positions are shown, one when engaged with the tooth 6, and the other when passing this tooth. By constructing the triangle of forces, **a-b-c,** for the Defendants' pawl, the pressure normal to the face of the pawl is measured by the line **a-b,** and the pressure at right angles thereto by **c-a,** the resultant of these two pressures, being measused by the line **c-b,** as before, will measure the pressure on the pin 11. Thus it is seen that in the Defendants' pawl the pivot 11 also performs the function of the pin 12 in the Complainant's pawl, and that, therefore, the two pawls are substantially alike. It will be understood, of course, that these two analytical sketches are merely diagrammatic, and no attempt has been made in either of them to do more than to show the movements of the pawls about their pivot points and the general direction of the forces brought into action when the clutches are engaged.

We will next consider the claims insisted on in the Complainant's patent in suit. To assist in making comparisons,

these claims have each been divided into their respective elements, and each element given a number, the same element in each claim bearing the same number. Sub-divisions of the elements are designated by **a, b, c,** etc.

The analyses of the several claims follows:

Claim 15.

The combination with a frame, of

(1) a pulley
  (a) having teeth thereon;
(2) a movably supported clutch member;
(3) a pawl carried by said clutch;
(4) a hoisting rope;
(5) a movable member to which said rope is attached,
  (a) connected to said clutch whereby the same is actuated to bring the pawl thereof into engagement with said pulley; and
(6) a trip for said clutch member,

for the purpose specified.

(1) a pulley

Claim 16.

The combination with a frame, of

(1) a pulley
  (a) having teeth thereon;
(2) a movably supported clutch member;
(3) a pawl carried by said clutch;
(4) a hoisting rope; and
(5) a movable member to which said rope is attached,
  (a) connected to said clutch whereby the same is actuated to bring the pawl thereof into engagement with said pulley,

for the purpose specified.

Claim 17.

The combination with a frame, of

(1) a pulley

(a) having teeth thereon;

(2) a movably supported clutch member;

(3) a pawl carried by said clutch member;

(7) means for holding said clutch member yielding out of its engaging position; and

(5) means for actuating said clutch member to bring the said pawl carried thereby into engagement with said pulley,

(b) said pawl being arranged so that the rearward revolution of the pulley draws the clutch member into clamping engagement with the rope,

(b) said clutch actuating means being adapted to be actuated by the load upon the hoisting rope.

Claim 18.

The combination with a frame, of

(1) a pulley;

(2) a movably supported clutch member

(a) adapted to coact with the pulley in clamping a rope;

(7) means for holding said clutch member normally out of its engaging position;

(5) means for connecting said clutch member to said pulley,

(a) arranged so that the rearward revolution of the pulley draws the clutch member into clamping engagement with the rope,

(b) the said means being adapted to be actuated by the hoisting rope when the load thereon is sufficient to counteract the means for holding said clutch member out of its engaging position.

(8) (c) said clutch member being adapted to automatically return to its initial position when the hoisting rope is relieved of the load.

Claim 19.

The combination with a frame, of

(1) a pulley;

(2) a movably supported clutch member;

(5) means for connecting said clutch member to said pulley,

(a) arranged so that the rearward revolution of the pulley draws the clutch member into clamping engagement with the rope,

(b) said means being adapted to be actuated by the load on the hoisting rope; and

(8) means for automatically disengaging said connecting means from said pulley when the hoisting rope is relieved of its load.

Claim 24.

The combination with a frame, of

(1) a pulley;

(2) a movable clutch member

(a) adapted to coact with the pulley in clamping a rope,

(7) (b) said clutch member being normally held in an inoperative position;

(5) means for connecting said clutch member to said pulley

(a) arranged so that the rearward revolution of the pulley draws the clutch member into clamping engagement with the rope,

(b) said means being adapted to be actuated by the load on the hoisting rope; and

(8) means for automatically returning said clutch member to its initial, or disengaging position and disengaging the said pulley connecting means thereof when the hoisting rope is relieved of its load.

Claim 25.

The combination with a frame, of

(1) a pulley;

(2) a movably supported clutch member;

(3) a pulley engaging pawl carried by said clutch member

(a) arranged so that when it is in its engaging position the rearward revolution of pulley draws the said clutch member into clamping engagement with the rope;

(4) a hoisting rope;

(5) connections therefor to said clutch member whereby the same is actuated to bring said pawl connecting means into its pulley engaging position, and

(8) means for automatically returning said clutch member to its initial position when said pawl is disengaged from said pulley.

For still greater convenience in comparing the several claims in suit, the accompanying tabular statement has been prepared, entitled "Schedule of Claims of Myers Patent in Suit."

A column is given to each of the seven claims. The elements, with the numbers given to them in the preceding analyses are given on the right of the columns. Opposite each numbered element in its proper column, the number of the claim is given in which this element appears. The repeating of a number for any element simply means a change in the wording of that element.

Schedule of Claims of Myers Patent in Suit.

15	16	17	18	19	24	25	
							The combination with a frame, of
15	16	17	18	19	24	25	1. a pulley
15	16	17					1-a. having teeth thereon;
					24		2. a movable clutch member
15	16	17	18	19		25	2. a movably supported clutch member
			18		24		2-a. adapted to coact with the pulley in clamping a rope;
15	16						3. a pawl carried by said clutch;
		17					3. a pawl carried by said clutch member;
						25	3. a pulley engaging pawl carried by said clutch member
							3-a. arranged so that when it is in its engaging position the rearward revolution of pulley draws the said clutch

16	16	17	18	19	24	25	member into clamping engagement with the rope;
15						25	4. a hoisting rope;
	16						4. a hoisting rope; and
			18	19	24		5. means for connecting said clutch member to said pulley;
15	16						5. a movable member to which said rope is attached
							5-a. connected to said clutch whereby the same is actuated to bring the pawl thereof into engagement with said pulley; and
		17					5. means for actuating said clutch member to bring the said pawl carried thereby into engagement with said pulley.
		17					said pawl being
		17	18	19	24		5-a. arranged so that rearward revolution of the pulley draws the clutch member

15| 16| 17| 18| 19| 24| 25||

into clamping engagement with the rope,

17 24 5-b. said clutch actuating means being adapted to be actuated by the load upon the hoisting rope,

18 5-b. said means being adapted to be actuated by the hoisting rope when the load thereon is sufficient to counteract the means for holding the said clutch member out of its engaging position,

19 5-b. said means being adapted to be actuated by the load on the hoisting rope; and

25 5. connections therefor to said clutch member whereby the same is actuated to bring said pawl connecting means

15	16	17	18	19	24	25	
							into its pulley engaging position
15							6. a trip for said clutch member,
		17					7. means for holding said clutch member yielding out of its engaging position; and
			18				7. means for holding said clutch member normally out of its engaging position;
					24		7-a. said clutch member being normally held in an inoperative position
				19			8. means for automatically disengaging said connecting means from said pulley when the hoisting rope is relieved of its load
					24		8. means for automatically returning said clutch member to its initial or disengaging position and disengaging the said pulley connecting means

15	16	17	18	19	24	25	
							thereof when the hoisting rope is relieved of its load.
						25	8. means for automatically returning said clutch member to its initial position when said pawl is disengaged from said pulley.
			18				8-a. said clutch member being adapted to atuomatically return to its initial position when the hoisting rope is relieved of the load.

It will perhaps be sufficient if, in connection with the Complainant's patent, we simply point out the separately numbered elements in the different claims. Element No. 1, which appears in all the claims, is the pulley 5. Element No. 2, which appears in all the claims, is the clutch member 9. Element No. 3, which appears in claims 15, 16, 17 and 25, is the pawl 10. Element No. 4, which appears in claims 15, 16 and 25, is the hoisting rope 20. This element also appears in connection with element No. 5, in claims 17, 18, 19 and 24. Element No. 5, which appears in all of the claims, is the swivel bolt 17, the lever 14, link 13, and lever 7; also the clutch member 9, pawl 10 and lugs 6. Element No. 6, which appears in claim 15, is the lever 7 to which the trip rope is attached; also the clutch 9 and pawl 10. Element No. 7, which appears in claims 17, 18 and 19, is the spring 16, the spring 18, link 13 and lever 7. Element No. 8, which appears in claims 18, 19, 24 and 25, is the spring 16, the spring 18, the link 13 and lever 7.

Comparing now the "Complainant's Exhibit No. 2, Defendants' First Hay Carrier," with the claims in suit, and referring to "Complainant's Exhibit No. 5, Sketch of Defendant's First Hay Carrier," we find the pulley 5 having teeth 6 thereon, which is the first element of all of the claims. The movable clutch member, which is the second element of all of the claims, is the clutch 9. The third element, viz., a pawl carried by said clutch, or clutch member, is the pawl 10. The fourth element, a hoisting rope, identifies itself. The fifth element, viz., a movable member to which said rope is attached, etc., appears in the swivel bolt 17, link 13, lever 7, and pawl 10. The sixth element, namely a trip for said clutch member, lies in the lever to which the trip rope is attached, the link 13 and the lever 7. The seventh element, namely, means for holding said clutch member yielding out of its engaging position, lies in the springs 16 and 18, link 13 and lever 7. The eighth element, namely, means for automatically disengaging said connecting means from said pulley when the hoisting rope is relieved of its said load, and for automatically returning said clutch member to its initial or disengaging position, etc., lies in the springs 16 and 18, the link 13 and lever 7.

In this Defendants' structure, it will be understood that the slot 8 performs the function of the radius member 8 of the patent in suit, it being merely the substitution of a sliding element or a swinging element. The other variations having been explained fully, need not be repeated here.

We will next compare the "Complainant's Exhibit No. 3, Defendants' Second Hay Carrier" with the claims in suit, and for convenience we will refer to the "Complainant's Exhibit No. 6, Sketch of Defendants' Second Hay Carrier."

Elements Nos. 1, 2, 3, and 4, are found in the same or corresponding parts referred to in Defendant's first hay carrier. Element No. 5, namely, a movable member to which said rope is attached, etc., lies in the weighted lever having a fulcrum 15, the point of attachment being 17, together with the link 13, lever 7 and pawl 10. The 6th element, namely, a trip for said clutch member, lies in the weighted lever to which the trip rope is attached, the link 13 and the lever 7. The 7th element, namely, means for holding said clutch member yielding out of its engaging position, lies in the weighted lever, link 13 and

lever 7. The 8th element, namely, means for automatically disengaging said connecting means from said pulley when the hoisting rope is relieved from its load, and for automatically returning said clutch member to its initial or disengaging position, etc., lies in the weighted lever, the link 13 and lever 7.

The action of the slot 8 in Defendants' second hay carrier is the same as the slot in the first hay carrier, it being the substitution of a sliding element for the swinging element of the patent in suit. Other variations having been fully explained in the descriptions of the structures themselves need not be repeated in this connection.

It is thus seen that both the Defendants' first hay carrier and second hay carrier contain all of the elements of each of the claims in suit, either identically or by equivalents; that these elements have the same relation to each other, and that they coact in the same or substantially the same way to produce the same results.

I find, therefore, that the structures recited in the said claims are embodied, or substantially embodied, in the said Defendants' structures.

Mr. Lockwood. Counsel for the Defendant Company objects to and moves to strike out all of the portions of the last answer of witness relative to so-called "Complainant's Exhibits No. 4, No. 5, No. 6, No. 7, and No. 8, on the ground that they are incomplete and also incorrect presentations, or representations, of any structure, or part of structure involved in this cause.

Counsel for Defendants Company also states that it is his understanding that the answer of the witness, as to Defendants' Exhibits No. 2 and No. 3 is subject to proof hereafter to be given. That said exhibits, or either of them were manufactured and sold by the Defendant company, as stated by the counsel for Complainant when said exhibits were introduced. This statement is made merely to make the matter clear as counsel for the Defendant company has not admitted, and does not admit that said exhibits, or either of them, were made and sold by the Defendant company.

Adjournment until Tuesday morning, March 28th, 191?, at nine o'clock.

March 28th, 1911.

Met pursuant to adjournment.

Present as before.

Complainant's counsel offers in evidence the sketches produced by the witness, Nos. 4, 5, 6, 7 and 8, with the request that they be marked Complainant's Exhibits Nos. 4, 5, 6, 7 and 8, with the descriptive titles given thereto by the witness, and the exhibits are so received and marked.

Mr. Lockwood: The above exhibits objected to for the same reasons as stated at the end of the last answer of the witness.

Complainant's counsel: You may now proceed with the cross examination.

Cross Examination by Mr. Lockwood.

XQ. 4. While working on the farm in your youth, did you have any experience in operating any hoisting device similar to that set forth in the patent in suit? No. 876,991, to Myers?

A. No. In those days, the hay unloading rigging involved the use of a rope for a track. It was not until about three years ago, or so, that I had any experience with a hay unloader requiring a track like the carrier of the patent in suit, and in which a friction clutch mechanism was made use of. I have never operated a carrier like that of the patent.

XQ. 5. Do you consider that it makes any difference in the operation of a device like that of the patent in suit whether the track be a flexible rope or cable, or a rigid track?

A. No difference whatever, so far as the hoisting pulley of the patent is concerned. It will perform all of its functions without any track at all, simply by securing it overhead, and would be a very serviceable device if attached to the end of a gin-pole, or to a traveling crane. When used as a hay unloader, however, it is usually connected to a metal track. In the early days, a wooden track was used, and before that, a rope or cable track.

XQ. 6. You stated about the middle of answer to Q2 that while on the farm you operated various machines, including

several varieties of hay unloading devices. Will you please state the nature of the hay unloading devices referred to?

A. When unloading hay in the barn, we used an arrangement of pulleys and rope, by means of which the load on a fork was first raised straight up, or nearly so, to clear the big beams, and then it was carried over to near the middle of the mow where it was dropped by unlatching the fork with a trip rope. We also used in the barn, as I now recall it, a wooden track projecting out through the gable, the load first being raised directly from the wagon up to the end of the track and then hauled along into the barn and dropped into either mow. When stacking hay in the meadows, we used a gin-pole, the load being hoisted from the hay rack directly to the end of the pole and then the pole was swung around over the stack, where the load was dropped. In those days, slings were not used, but forks of various shapes were used which would lift loads of four or five hundred pounds.

XQ. 7. In those constructions, what supported the load after it had been elevated by the hoisting device, and while it was being moved horizontally into the hay mow, or being swung around with a gin-pole?

A. The load was hoisted by a horse, the rope leading through suitable pulleys on its way to the whiffle-tree. In the first device referred to, after the load was lifted to clear the beams, it simply moved off over the mow by the continued hauling on the rope. The arrangement of falls being such that this naturally took place. With the wooden track, as I recall it, the pulley was provided with some sort of ratchet mechanism which, when the load reached the top, held it suspended. The load then could be hauled into the barn by a separate rope, also arranged to be attached to the whiffle-tree. With the gin-pole, the load was simply held in its elevated position by the horse while the pole was swung around over the stack. This was possible, as the rope was led down the gin-pole to a pulley at the bottom. There was no locking mechanism used except in connection with the wooden track and the details of that I do not recall.

XQ. 8. Was the hay unloading device which you refer to as having been used in connection with the wooden track operated or worked in substantially the same manner as the hoist-

ing device in the patent in suit, if used for unloading hay, in a similar situation?

A. It is my recollection that the arrangement of falls was similar to that shown in the patent in suit; that is, the ropes were arranged in the manner shown except that a single pulley was used in the bight of the fall to which the fork was attached. After the load was hoisted to the track and locked, it was hauled along over the track in much the same way as with the more modern unloaders.

XQ. 9. In that old instance referred to by you, as well as in the use of the device shown in the patent in suit, for unloading hay, the load would first be elevated and when elevated be locked by the hoisting device so that the load would remain supported in elevated position, and then the hoisting device and load would be moved along the track to the discharging position, would it not?

A. Yes; that is my recollection.

XQ. 10. As I understood you, you do not remember the details of the construction of the hoisting device, and particularly the locking means. Is that correct?

A. Yes. I first saw the track in use, as I recall it, about the time I left home to go to Annapolis, or it may have been during my vacations from 1874 to 1878. I worked on the farm during a part of those vacations, but the haying season was usually over when I got home, and I did not come to know this track device as well as the earlier forms.

XQ. 11. Do you recollect enough about it to remember how the locking device was actuated, or controlled, in that hoister used in connection with the track?

A. My impression is that it was some form of pawl and ratchet. I could not say positively just what it was.

XQ. 12. Do you mean a pawl and ratchet mechanism in which the ratchet was connected with a pulley, and the pawl was moved into engagement with the ratchet by gravity or spring, and means operated by a grip rope was used to hold the pawl out of engagement with the ratchet, when desired?

A. I do not now recall the mechanism with sufficient clearness to say just how it did work. The thing which I recollect is that the load was hoisted and locked and then moved along on the track. I would have to refresh my mem-

ory in some way to speak with definiteness on the means used for locking the load in its elevated position.

XQ. 13. I call your attention to copies of the following U. S. Letters Patent:

No. 7,681, patent to Van Sickle, May 15, 1857;

No. 48,034, patent to Janet, May 30th, 1867;

No. 77,629, patent to Manley, May 5, 1868;

No. 95,971, patent to Bellair, Oct. 19, 1869.

Will you please refresh your recollection by examining said patents, and state whether or not they enable you to recall the arrangement and operation of the locking means in the hoisting device about which you testified as having seen used in connection with a track?

A. None of the patents referred to strikes me as being familiar, and I could not say that the device I referred to was like any one of them.

XQ. 14. In your answer to Q2, at the end of the third paragraph therein, you state that you have seen a number of hay unloading devices used during the past forty years or more. Will you please state what unloading devices you saw during that period, aside from the three types which you have already mentioned?

A. Some three years ago, when engaged on a suit involving hay carriers, I had occasion to look up the art, and also examine hay carriers in use, and to operate some of them. At that time I became well acquainted with the hay carriers manufactured by the Ney Mfg. Co., F. E. Myers & Bros., and the Boyer carrier manufactured by the Goshen Mfg. Co. There were other which I do not recall so distinctly at this time.

XQ. 15. After 1878, and up to three years ago, 1908,—a period of thirty years, what unloading devices do you remember having seen used?

A. During that period I had no actual experience with hay carriers, my acquaintance with them being such as was acquired at County Fairs, and occasional visits back home, and to farmer friends. I could not now name any particular hay carrier seen during that period.

XQ. 16. In your educational work in connection with the University of Michigan, have you had any occasion to treat or

experiment with hoisting devices of the type shown in the patent in suit?

A. During that period of thirty years I taught the general subject of hoisting devices for twenty years, or more, and made some investigations on pulleys designed to lock the load in an elevated position, but I have had no practical experience with hay carriers like that of the patent in suit. At the time referred to in my previous answer, some three years ago, I did have occasion to use practically one of the hay carriers manufactured by the F. E. Myers & Bros.; at least, it was known as the Myers hay carrier.

XQ. 17. At the end of your answer to Q. 2, you spoke of having testified in the case of Ney Mfg. Co. vs. Garver Bros. relative to the Tschantz patent, No. 601,291. I show you a copy of what purports to be U. S. Letters Patent to Tschantz, No. 601,291, and will ask you to state whether or not this is the patent referred to by you?

A. Yes; that is the patent.

Mr. Lockwood: Said copy of the drawings and specifications of said Letters Patent is offered in evidence and marked "Defendants' Exhibit, the Tschantz patent."

XQ. 18. When did you give your deposition in that case?

A. I find on referring to the record in that case that I began my testimony on October 11th, 1907.

XQ. 19. Do you remember about when, prior to that date, October 11th, 1907, you investigated the hoisting devices to which you have referred?

A. In preparing for that case, I made a careful study of a number of hoisting devices which were at hand, and some of which were introduced in that case as exhibits. It was just prior to the date of testifying that I operated one of the Myers hay carriers myself. The precise dates I do not recall.

XQ. 20. Where did you operate the same?

A. In the barns of the Michigan Asylum for the Insane in this city.

XQ. 21. Did that suit, Ney Mfg. Co. vs. Garver Bros., relate to the means for locking the load in an elevated position?

A. Yes, I believe it did among other things. I see by referring to the claims in suit in that case that a lateral exten-

sion and a lateral supporting track alongside the hay carrier were elements involved. I do not recall very definitely just what the features were on which the case turned.

XQ. 22. Did you in that case testify as follows:

> "These three references alone, it seems to me, are sufficient to dispose of the claims of Complainant's expert, that the side draft feature of Complainant's device is a radical novelty. It is seen, in fact, to be no novelty at all.
>
> "We will now consider the second important improvement alleged to be peculiar to Complainant's device, viz., the lifting of the load to any desired height, and automatically locking it there."

And in view of those statements and the claims stated in your deposition in that case, is it your recollection that that suit involved the side draft feature, and also the automatically-locking feature of the hoisting device in the Tschantz patent.

A. It appears from the printed record in that case that I so testified. The language quoted from my testimony would indicate that both the side draft feature and the automatic locking feature were involved in the Tschantz patent, and the claims would also so indicate. I have not, however, reviewed the record in that case, and base my statement merely on the language quoted and on the claims themselves.

XQ. 23. Please state the numbers, names and dates of the Letters Patent which you examined and considered in preparing for and giving your deposition in that case, and which show means for automatically locking the hoisting means for holding the load in an elevated position.

A. I can give the patents referred to be me as they appear in the printed record very quickly, but to state what these patents show would require a review of the record and possibly of the patents themselves.

The patents considered by me in that earlier case were as follows:

Carpenter, No. 52,676, Feb. 20, 1866;
Powell, No. 107,523, July 26, 1870;

Tanner, No. 138,955, May 13, 1873;
Feitzhous, No. 154,598, Sept. 1, 1874;
Howell, No. 259,312, June 13, 1882;
Ackerman, No. 273,472, March 6, 1883;
Norton, No. 309,157, Dec. 9, 1884;
Kanouse, No. 330,983, Nov. 24, 1885;
Hunt, Helm & Ferris, No. 351,442, Oct. 25, 1886;
Myers, No. 357,964, Feb. 15, 1887;
Boyer, No. 409,164, Aug. 20, 1889;
Hunt, No. 442,286, Dec. 9, 1890;
Boyer, No. 517,835, April 10, 1894;
Louden, No. 525,425, Sept. 4, 1894;
Myers, No. 525,715, Sept. 11, 1894;
Louden, No. 530,232, Dec. 4, 1894;
Grosscup, No. 583,468, June 1, 1897;
Van Sickle, No. 211,358, Jan. 14, 1870;
Green, No. 406,579, July 9, 1889;
Porter, No. 497,207, May 9, 1893;

A number of these undoubtedly refer to locking means, but just which and in what manner I am not prepared to state without an examination of the record or of the patents themselves.

XQ. 24. Did you in your deposition in that case testify as follows:

> "Summarizing the prior art, we see that it discloses numerous examples of clutch mechanisms including those which automatically sustain the load at any desired elevation, also including means for lowering the load to a lower elevation."

A. It appears from the printed record that I so testified.

XQ. 25. In said extract from your former deposition by "prior art," did you mean the art prior to the grant of the patent to Tschantz No. 601,291, which was the patent involved in that suit?

A. The patents referred to were considered by me as being prior to the date of the Tschantz patent in suit.

XQ. 26. In the first part of your answer to Q3, referring

to the object of the invention of the patent to Myers, No. 876,-991, which is involved in our present suit, you state,—

> "The main object of the invention is to provide a hoisting apparatus adapted to automatically lock the load in position."

In view of your statement in your deposition in the case of Ney Mfg. Co. vs. Garver Bros. Co., referred to in XQ. 24, Myers in the patent in the present suit, was not the inventor of hoisting apparatus adapted to automatically lock the load in position. Is that true?

A. Yes, true enough, I should say. While not the first to produce hoisting mechanism adapted to automatically lock the load in position, he has, in the patent in suit, clearly produced such a mechanism. The statement from the beginning of my answer to Q. 3 is the language of the patent, substantially as it appears on page 1 of the specification, lines 16-18.

Recess to 1:30.

XQ. 27. In the first part of your answer to Q. 3, you also make the following statement:

> "In ordinary use, this hoisting apparatus has attached to it at the top a truck adapted to travel on a track, mounted in the peak of the building, or elsewhere, depending on the disposition of the material being handled. In operation the load is suspended underneath the hoisting apparatus and then lifted to the desired height, after which, on slacking away the hoisting rope, a clutch is automatically brought into operation, which locks the load in its elevated position. The load can then be traversed to any point desired on the track provided for the purpose. Provision is also made for tripping the apparatus when desired, so that the load can be lowered from its elevated position."

Is it your understanding, and do you mean to convey the impression that the features of the hoisting apparatus mentioned in the above statement, and the operation thereof, were new and originated by Hubert A. Myers in the patent in suit, No.

876,991, in view of your knowledge of the prior art, as heretofore explained by you and as you learned the same in the prior suit of Ney Mfg. Co. vs. Garver Bros. Co?

A. No, that was not the idea of the statement which has been quoted. The object of the statement is to show the general use or the application of hoisting pulleys like those in suit. The first part of the answer to Q. 3 is in the nature of an introduction, which it was considered would be helpful in understanding the mechanism which forms the subject-matter of the claims in suit. The description of that mechanism immediately follows the introductory paragraph.

XQ. 28. Is it your understanding that the construction and operation of the hoisting apparatus as described by you in your statement which is quoted in XQ. 27 was, as to every feature thereof, old in the art prior to the Myers patent in suit, No. 876,991?

A. I have not examined any prior art in connection with this case, and do not know just what it would show with respect to the Myers patent in suit. I have, however, stated in a previous answer, or it has appeared in a previous answer quoted from the record of the earlier suit, that it was old to elevate a load and lock it automatically at a desired height; that it was old to traverse the load to a desired point after being elevated, and that it was old to lower the load from an elevated to a lower position.

XQ. 29. Then, as a matter of fact, in view of your knowledge of the prior art learned both from your observation and your investigations in the suit of Ney Mfg. Co. vs. Garver Bros. Co., all the features of construction and operation mentioned in the introductory clause of your answer to Q. 3 as quoted in XQ. 27, was old prior to the date of the Myers patent in suit, was it not?

A. No, I would not say that, without first making an examination of the prior art. No features of construction were described in the introductory paragraph quoted in XQ. 27 from my answer to Q. 3; nor is any operation described except in a general way. My knowledge of the prior art learned from my investigations in the earlier suit referred to is not really available to me in making this answer, as I have given it no consideration in connection with this case, and remember it only in a

general way. I should not wish at this time to say more than appears in my answer to XQ. 28, so far as concerns the relation of the prior art to the Myers patent in suit, from my knowledge or rather from my recollection of it.

XQ. 30. In view of your summary quoted in XQ. 24, from your deposition in Ney Mfg. Co. vs. Garver Bros. Co., would you say that at the date of the Myers patent in suit there was any feature of construction or operation in your statement from your present deposition quoted in XQ. 27, which was not old?

A. I had the summary appearing in XQ. 24 in mind when making the previous answer, and also my answer to XQ. 28. I do not consider it would be proper for me to go further at this time without an examination of the art, or, at least, without refreshing my memory on the state of the art at the date of the earlier suit.

XQ. 31. Please state whether or not, by reference to the printed record in the case of Ney Mfg. Co. vs. Garver Bros. Co., you made the following statements in your deposition in that case:

> "The raising and transportation of hay by means of pulleys and of a track is different in no material respect from the raising and transportation of any other substance. Manufacturing establishments have for years made use of various forms of lifting devices in connection with tracks for the purpose of transporting objects from one point to another in the plant. Many forms of lifts are used, the more common forms having means for holding the load at any desired height. Among the common forms are those exemplified in Defendant's exhibits, 'Ney Carrier' and 'F. E. Myers Company Carrier.'
>
> "The Ney carrier is that shown in the patent to Rowland No. 524,403, August 14, 1894. As ordinarily used these hoists have a swivel connection at the top so that the load can be hoisted from any convenient position, and when these carriers are mounted on a track, as is the case with the Defendant's mounted exhibits, the hoisting effort is naturally exerted at right angles to the track to prevent the load from moving until it is suspended at the desired height. These two examples

alone are sufficient to show how common it was, prior to the date of the patent in suit, to use a transverse or side-draft in connection with the carrying device for hoisting the load.

* * * * *

"We will now consider the second important improvement alleged to be peculiar to Complainant's device, viz., the lifting of a load to any desired height and automatically locking it there.

"This feature is also shown to be old in the patent to Rowland, and in the patents to Smith and Burr previously referred to, and in the exhibits exemplifying these patents.

* * * * *

"The patent to Carpenter, No. 52,676, Feb. 20, 1866, shows one of the old forms of track rope hay elevator and carrier; that is, a tautened rope is used for the track. Both the track and the hoisting rope have stops so that the rope may be locked in its upper position, after which the track stop is unlocked and the load transported to its destination.

"The patent to Powell, No. 105,723, July 26, 1870, shows an early form of hay carrier adapted to travel on a beam or a stretched rope and is provided also with a gravitating catch and a tripping device.

"The patent to Tanner, No. 138,955, May 13, 1873, is for a hay carrier of a different kind, the leading feature being a beam something like a gin-pole movable about its lower end and sliding on a guide-beam near its upper end. The hoist being attached to the upper end of the movable beam the load is swung in either direction lengthwise of the barn within the range of the movable beam. The hoisting rope has a thimble or ferrule attached to it so that the load may be automatically secured at its upper position while being transported.

"It will be observed that the down haul of this hoist leads to the side of the barn and down to the floor and can go off from the barn in any desired direction.

"The patent to Feitzhous, No. 154,598, Sept. 1, 1874, is for a hay elevator and carrier mounted on a track and

provided with an automatic clutch to hold the load at any desired height. The operation of this clutch is made perfectly clear by the drawing. The load is transported along the track after being unlatched from the stop shown at one end of the track.

"The patent to Howell, No. 259,312, June 13, 1882, is for a hay elevator at the end of a crane. The crane is held in position while the load is being lifted and automatically unlocked when the load reaches the latch under the end of the crane and the crane is then swung by the tension in the down-haul rope. It will be observed that this down-haul rope after reaching the floor leads directly out of the barn at right angles to the ridge.

* * * * *

"The patent to Norton, No. 309,157, Dec. 9, 1884, shows a hay elevator or carrier for sustaining the load at any desired height. It also shows a latching arrangement operated by the hoist in its upper position, permittings the transportation of the load along the track.

"The patent to Kanouse, No. 330,983, dated Nov. 24, 1885, also shows an automatic-lock for sustaining the load at any desired height, and also means of transporting the load while suspended at any height. I quote from the specifications, beginning at line 16:

> 'The object of my invention is to handle hay or other commodity in large or small quantity, to elevate it at any height desirable, and carry it to a place of deposit, the carrier being allowed to move in a horizontal direction at any time in the process of elevating the load at the will of the operator.'

It will be noted that while the device is entitled a hay carrier, it is adapted to be used with any other commodity. It will also be noted that this carrier is adapted to use either a single or double fall for hoisting.

* * * * *

"The patent to Meyers, No. 357,964, dated Feb. 15, 1887, shows in a hay carrier means for locking the load by means of a clutch working against the face of a pulley with a rope between. The load is released for transporting when it reaches the top of the lift.

"The patent to Boyer, No. 409,164, Aug. 20, 1889, has for its object to secure the carrier by a latch while lifting the load, the unlatching taking place when the load reaches the top of its lift, after which it is transported along the track.

"The patent to Hunt, No. 442,286, dated Dec. 9, 1890, shows another adaptation of track and carrier mounted thereon, and means for hoisting and transporting the load.

"The patent to Boyer, No. 517,835, dated April 10, 1894, is an improvement on the general type shown in the previous Boyer patent No. 409,164.

"The patent to Louden, No. 525,425, Sept. 4, 1894, shows a hay carrier providing for transporting the load in either direction on the track, a clutch for locking the load in its elevated position and for unlocking and lowering at a desired position.

"The patent to Meyers, No. 525,715, dated Sept. 11, 1894, is a hay carrier adapted to secure the load at any height and transport the same at that height. It is also provided with a swivel attachment so that the 'hoisting, holding and releasing mechanism' may be turned at an angle with the track. This therefore is an example of a hay carrier adapted to be used with a cross-haul.

"The patent to Louden, No. 530,232, Dec. 4, 1894, is for a hay elevator provided with a clutch adapted to sustain the load at any height, the clutch going into operation as soon as the horse stops. This clutch or brake is entirely automatic and operates to accomplish exactly the same object as Complainant's device, in elevating and sustaining its load. The load is released for transportation in its upper position.

"The patent to Grosscup, No. 583,468, dated June 1, 1897, is for a hay carrier, the object of which is to 'provide efficient means for thus raising a load and for allowing the trolley or car to make its horizontal trip with the load held at any desired degree of elevation.' Provision is also made for the automatic release of the trolley when the load reaches its maximum elevation. The trolley consists of two parts, one part riding on the

track, the part below called the 'elevator-beam' supported thereby and swivelled thereto. It is thus possible to adjust the hoisting mechanism for a lead of the rope in any direction with respect to the track, even to a direct cross-haul. It is not necessary in this device to transport the load by means of a hoisting rope; it can be transported by a separate rope or any other convenient way.

* * * * *

"The patent to Green, No. 406,579, July 9, 1889, shows a hoist similar that of Defendant's exhibit, 'Ney Carrier,' the date of the patent appearing on the exhibit. It is also an example of the side-draft in the same sense and to the same extent as the 'Ney Carrier,' and possesses further an automatic clutch for holding the load in any desired elevation. It also has the same side extension.

* * * * *

"If I am correct in my view, then claim 6 of the patent in suit is not entitled to a liberal interpretation but must be confined to the specific form and relation of the elements described in the specification."

A. It appears from the printed record in that case that I did make the statements quoted.

XQ. 32. In paragraph 8 of your answer to Q. 3, you make the following statement:

"It is to insure a positive grip on the rope that the present apparatus has been devised, and it will be seen that the grip is directly proportional to the load itself, being light for a light load and heavy for a heavy load."

And in the patent in suit, p. 1, line 77, appears the following statement:

"Thus arranged, the greater the load, the greater the clamping force of the clutch."

Is it your understanding, from your knowledge of the prior art,

that at the date of the Myers patent in suit there had been no hoisting apparatus in which the grip on the rope was in proportion to the load, the greater the load, the greater the clamping force of the clutch?

A. I have stated that my knowledge of the prior art is not really available to me at this time, as I have not reviewed it in connection with this case. I cannot, therefore, answer the question intelligently. My impression, however, is to the effect that some of the prior structures show clamping means in which the clamping effect increases with the load, and it may be that a number of prior structures show the same thing.

XQ. 33. In your deposition in the case of Ney Mfg. Co. vs. Garver Bros. Co., you refer to patent No. 530,232, to Louden, dated Dec. 4, 1894. I show you a copy of the said patent in the said prior suit and ask you to state whether in the hoisting device there shown, the load, when the hoisting rope is released, causes the clutch to clamp the rope against a pulley and the greater the load, the greater the clamping force of the clutch?

A From a casual examination of the drawings of the Louden patent, it would appear that that might be so. I am not sure, however, that the structure would operate to effect a clamping by merely lowering away on the hoisting rope. It will be observed that the two pulleys, D′ and D^2, over which the rope runs are mounted on a triangular frame pivoted at A^2. The arm which carries pulley D^2 is longer than the arm which carries pulley D′. Inasmuch as the pull in the rope G is the same in the vertical and horizontal parts, the resultant of this pull would appear to pass in such a direction through A^2 that the clamping might not take effect. In other words, in lowering away, the two pulleys D′ and D^2 might not be carried down as intended to clamp the rope. If, however, they should be carried down, then the clamping effect would, of course, increase with the load. Not only that, but the construction being similar to that of a knee joint, it is possible that the pressure would increase to such an extent as to crush the rope and rapidly destroy it. In the analysis of the knee joint, when the parts come straight, the pressure is theoretically infinite. The clamping effect would depend then upon the relative location of the clutch member with respect to the line connecting the end

pivots of the knee joint. If the rope were full size, as when new, the clutch would take one position and clamp with one force. When the rope was stretched, or partly worn out, the clutch would clamp with an entirely different and much greater force regardless of the size of the load. Thus it is seen that the clamping effect might or might not be proportional to the load, depending on the condition of the hoisting rope.

XQ. 34. Please state whether or not in the case of Ney Mfg. Co. vs. Garver Bros Co., the patent under which the Defendant was operating was U. S. Letters Patent No. 835,780, to A. P. Boyer, of Nov. 13, 1906, and whether or not in that case you considered the structure shown and described in said patent.

A. I do not remember that I considered the patent to Boyer referred to in my deposition in that case. I judge from a comparison of Fig. 1 of the patent to Boyer and of the Complainant's exhibit, Defendants' device, in the case referred to, that the Boyer structure in suit was the same as that shown in the Boyer patent.

XQ. 35. In that structure, such as shown in the patent to Boyer, No. 835,780, was the grip on the rope proportional to the load?

A. I do not remember just what relation the grip on the rope bore to the load. Apparently from the drawing, it increases with the load.

XQ. 36. In view of your knowledge of the prior art, as you have indicated it in your deposition, what do you understand or consider was the gist of the improvements made by Myers in the patent in suit, No. 876,991, so far as the clutching of the rope was concerned?

A. I have not given sufficient consideration to the prior art in connection with this case to answer the question intelligently. Indeed, I had not thought of it that way. The thing which particularly impressed me, however, as being novel was the mechanism for bringing the clutch into engagement with the pulley in such manner that the rotation of the pulley in lowering the load would carry the clutch with it and force it into engagement with the rope, the device itself being completely automatic, except for tripping, which is, in part, manual. Apparently the parts are so disposed with reference to each

other that just sufficient pressure can be brought onto the rope to hold it from slipping, this pressure being proportional to the load itself, and there does not appear to be any danger of jamming the rope, or subjecting it to undue pressure, which would rapidly destroy it. The mechanism impresses me as being quite remarkable in its method of operating and in the results it ought to accomplish.

XQ. 37. Have you ever had any experience in operating a hoisting device constructed under this Myers patent No. 876,991, or in accordance therewith?

A. None whatever to speak of.

XQ. 38. Is it your understanding that the actual clamping in the device shown in the patent in suit results from the actuation of the pawl by the pulley, or tooth on the pulley, after the pawl has been brought into the path of a tooth on the pulley, such actuation of the pawl tending to clamp the clutch against the rope and pulley?

A. Yes, I so understand it.

XQ. 39. Is it your understanding that that is the essentially novel feature of the improvement of Myers in this patent?

A. Not in the pawl alone. The pawl is merely a device for bringing the clutch member into engagement with the teeth on the pulley, and the clutch in its movement is guided by the radius members 7 and 8. The movement of the clutch is controlled through the link 13, lever 14 and the spring-controlled movable member 17, to which one end of the hoisting rope is connected. What impresses me as the novel feature of the Myers patent in suit is the train of mechanism between the swivel bolt to which the hoisting rope is connected and the clutch itself, so that the clutch is automatically thrown into operation and out of operation by the load when it is taken on and discharged, respectively.

XQ. 40. When the load is taken on, and the hoisting rope is being pulled, is it your understanding that the clutch is then and thereby caused to clamp, or is it when the hoisting rope is relaxed so that the load acting then with greater effect or pull on the swivel, will, through the connections you mention, move the clutch into a clamping position?

A. Neither one, as I understand it. When the load is taken on, the swivel bolt 17 descends against the spring 18

until the nut on the top of the swivel bolt contacts with the sleeve 23, where its movement is arrested. This movement in a downwardly direction of the swivel bolt has caused the clutch member 9 to descend to a point where the teeth on the face of the pulley can engage with the pawl 10. The rope is still free to pass under the clutch while hoisting. Then, when the rope is slacked off and the load starts to descend, the teeth 6 on the pulley engage with the face of the pawl and carry the clutch member 9 down into engagement with the rope, firmly gripping it. In this operation, there has been no further movement of the swivel bolt to which the end of the rope is attached.

It has been attempted to show on the drawings of the patent by dotted lines, the position of the clutch and its coacting members when in the engaged position,—that is, when clamping the rope, but it will be observed that the dotted position of the lever 14 appears to be in error, as when the load is taken on, the end of this lever will descend only to a point determined by the top of the sleeve against which the nut of the swivel bolt contacts.

XQ. 41. Can you tell us where the clutch, lever 7, link 13 and lever 14 will be, with reference to the dotted line position shown in Fig. 1 of the patent in suit, normally when the device is loaded and is being hauled up by means of the hoisting rope?

A. Not without working it out for a given size of rope. The position of these parts would also be determined by the amount of clearance given for the descent of the swivel bolt between its nut and the sleeve 23.

XQ. 42. Would such position of said parts, while the load is being hauled up, be almost or approximately the dotted line position shown in Fig. 1 of the patent in suit?

A. In view of the apparent error in the dotted position of the lever 14, I do not know just what the position of the clutch member 9, shown in dotted lines, is with respect to the hoisting rope. I should judge, however, that rather than being in the position for hoisting, it was in the extreme position of clamping. I have worked out a new position of the lever 7, assuming the lever 14 to descend until stopped by the sleeve 23, and I find that the clutch will have descended approximately one-third of the distance shown in dotted lines below the clutch.

In this position, the pawl 10 would have swung down into the path of the teeth 6. Then when the rope is slacked off, the pulley will, of course, carry the clutch further in its swinging movement to some such position as is shown in dotted lines. The actual distance carried will, of course, depend on the size of the rope,—whether it is a new rope or a worn rope. The clutch in being swung down by the pulley and carrying with it the lever 7, will also, through the link 13, carry the lever 14 down into its dotted position. It would appear, therefore, from this analysis, that the dotted position of the lever 14 is, after all, not in error, but is simply the position taken by this lever when the clutch has been forced into engagement with the rope by the teeth on the pulley. In other words, the lever 14 has been carried down a little way by the swivel bolt when the load is applied, and has been carried the balance of the way when the clutch is forced into engagement with the rope by the backward movement of the pulley. Thus it would appear that while the load is being hauled up, the position of the parts instead of being approximately the dotted line position, would be a position about midway down to the dotted line position.

XQ. 43. Does Fig. 1 of the Myers patent in suit show the pawl in its dotted line position being actuated by the pulley so as to bring the clutch in clamping position?

A. No. In the dotted position the pawl is shown lapping over one of the teeth on the pulley. In operation, however, it would not take such a position, but would fall in between the teeth on the pulley as the clutch descended into engagement.

XQ. 44. If the load pulled the washer near the upper end of the swivel bolt down upon the sleeve 23, said washer would move the outer end of the lever 14, a distance equal to the space between the washer and the sleeve, and the inner end of the lever 14 would move the link 13 upward a distance somewhat less than the space between the washer and the top of the sleeve 23, for the inner end of the lever 14 is shorter than the outer end. Then, while the load is being hauled up, the link 13 would move the lever 7 a distance slightly less at the point of connection between the two than the space between the washer on the swivel bolt and the sleeve. Is that correct?

A. Yes. It appears from the drawing that the length of

slot unoccupied by its pin is about three-quarters of the space between the washer and the top of the sleeve. Thus, when the load comes on and the swivel bolt descends to the top of the sleeve, and the link 13 is shoved up, the clutch member 9 with its connected members, drops by gravity until arrested by the pin in the top of the slot,—or rather as the link 13 is shoved up, the clutch and connected members descend by gravity, the pin remaining in the top of its slot.

Adjourned until 1 o'clock March 29th, 1911.

March 30th, 1911.

Met pursuant to adjournment.

Counsel present as before.

Cross Examination of Prof. Cooley resumed.

XQ. 45. What do you understand the word "pawl," as used in the patent in suit, particularly in the claims, to mean? In other words, what definition would you give to the word "pawl?"

A. The pawl is the part which coacts with the teeth on the face of the pulley, the two together constituting a pawl and ratchet mechanism. In the patent, the pawl is designated by the numeral 10.

XQ. 46. What is the general definition of the word "pawl" as understood in mechanical engineering?

A. A device for permitting movement in one direction and preventing movement in the opposite direction, the term being used in connection with a rack or ratchet, or teeth of some sort with which the pawl co-operates.

XQ. 47. Is the idea of the pivotal mounting of a pawl included in your definition or understanding of your meaning of the word "pawl?"

A. Pawls are usually mounted on a pivot of some sort. Not infrequently pawls are in the form of springs, in which the flexure of the spring takes the place of a pivot.

XQ. 48. If the pawl 10 were rigidly secured to the clutch member 9 in the device shown in the patent in suit, instead of being pivoted on said clutch member, would the device operate?

A. I do not think it would; but I should not wish to say positively without an opportunity to examine a structure like

that shown in the patent and to test it out by actual manipulation.

XQ. 49. In some of the claims, in the patent in suit, one element is "a pawl carried by said clutch." What do you understand to be the meaning of the words "carried by said clutch?"

A. Literally what the words mean; i. e., a pawl which is carried by the clutch and which moves with the clutch, is always, present with the clutch and maintains therewith a coacting relation.

XQ.50. If the pawl were carried by some part other than the clutch, would you say it was "carried by said clutch?"

A. It would depend, of course, on how it is carried. For example, the pawl might be mounted in connection with the lever 7 and its pivot D and do precisely what it does in its present position, i. e., operate in the same way and accomplish the same result. Literally, it would be carried by the lever 7 and its pivot D, and yet the pivot D being a part of the clutch, it might also be said to be carried by the clutch. The letter D in my answer refers to the pivot connecting the lever 7 with the clutch member 9. It does not appear on the patent drawing, but does appear in "Complainant's Exhibit No. 4, Sketch of Complainant's Hay Carrier from the Patent in suit."

XQ. 51. If the pawl 10 were pivoted on bar 7 but not on pivot D, say between the pivot D and the fulcrum C, but where the pawl could be moved into the path of the teeth 6. Would you say that the pawl in that instance was carried by the clutch or the clutch member?

A. Not literally, but substantially, I should say, assuming, of course, that such a construction could operate in the same way to accomplish the same result.

XQ. 52. Suppose the part 10 were rigid on the clutch 9, there being no pivot 11, or pin 12. Would you call such construction "a pawl carried by said clutch?"

A. The question, as I understand it, does not describe an operative structure. If, however, the clutch member with the rigidly connected detent,of the question, be adapted to pass the teeth on the pulley when it moves in one direction, and holds the pulley against movement when it moves in the opposite direction, then there might be the equivalent of the clutch

and pawl of the patent, and the pawl be said to be carried by the clutch. Perhaps I could make the answer more definite with a better understanding of the construction intended by the question.

XQ. 53. If the part 10 were rigid on the clutch 9, would you still call the part 10 a pawl?

A. The preceding answer is also applicable to this question, and I may add to it that the pivot feature being done away with, there would be no pawl.

XQ. 54. Would the device shown in the patent in suit be operative if the stop pin 12 were removed from the clutch 9?

A. Yes, I think it might be. The back of the pawl is very close to the lever 7, and this lever itself could take the place of the stop pin 12.

XQ. 55. In that event, would there be the line of force indicated by the line **c-a** in Fig. 2 of "Complainant's Exhibit No. 7?"

A. I have not analyzed such a construction, but expect if made, such an analysis would show a line corresponding to **c-a.**

XQ. 56. In such construction, could there be anything more than the line of force indicated by **a-b?**

A. That would depend on the relation of the parts to each other in the proposed new construction. The parts could, I think, be so disposed relatively that the force **a-b** would be directly opposed by an equivalent force; but as stated before, I should expect the analysis to show a triangle of forces corresponding to that seen in Fig. 2 of "Complainant's Exhibit No. 7."

XQ. 57. What part do the bars 7 and 8 play in the actual clamping action between the clutch 9 and the pulley and rope?

A. The bar 7 defines and guides the movement of the lower end of the clutch member 9 and the bar 8 performs the same functions for the upper end. It is through and by means of these bars that the clutch member is forced against the rope when the pawl engages a tooth on the pulley in the backward movement of the pulley.

XQ. 58. With the device of the patent in suit loaded and the load being elevated, as I have understood you, the bars 7 and 8 and the clutch are at that time in the position about inter-

mediate the full and dotted line positions in Fig. 1 of the patent in suit. Then only the inner end of the pawl 10 would project into the path of the tooth on the pulley so as to overlap, say, one-half of the width of the tooth. Then suppose the hoisting rope to be slacked off and pulley starts backward. What causes the pawl to move still further inward to the dotted line position in the drawing referred to?

A. That would depend on the relative shape of the pawl and tooth. If the plane of the faces in contact passes above the center of the pulley, the mere engagement of the pawl and tooth would tend to draw the pawl in onto the tooth if the plane of engagement passed through the center of the pulley, there would be no such tendency and the clutch would be moved in by the radius members 7 and 8. I find, on examination, that the plane of the face of the pawl passes above the center 4 of the pulley. The face of the teeth, however, appear to be drawn radially, or very nearly so. Therefore in the precise construction shown by the patent drawings, the further movement of the pawl inward would apparently be caused by the radius members themselves.

XQ. 59. What do you understand to be meant by the words "actuated" and "actuating" in the claims of the patent in suit that you have discussed?

A. My first thought was that the words meant a forced relation between the load on the hoisting rope and the clutch. In other words, that as the swivel bolt 17 was forced down by the load, the clutch was also forced down by the intermediate connections: but a more careful analysis showed that such is not the case. As was pointed out in the answer to XQ. 43, when the load is taken on, the swivel bolt descends against the spring 18 until the washer on the nut at its upper end contacts with the sleeve 23. During this movement the link 13 has been moved upward by the lever 14 a distance about equal to the unoccupied length of the slot in the upper end of the link 13. This movement has not caused any corresponding forced movement of the lever 7 and the clutch members connected therewith, but in virtue of the link 13 having been moved up, the lever 7 and the clutch members are free to fall by gravity, and they do so fall. Therefore, the words "actuated" and "actuating" in the claims have a broader meaning, one in

which the parts can actuate, or are caused to actuate by other forces than that produced by the hoisting rope itself; and in the case of the patent, the other force is that of gravity.

XQ. 60. Would one understand, when the word "actuated" or "actuating" is used in the usual and ordinary sense to mean a positive transmission of power by the source of power, or a forced relation, as you term it, between the source of power and the thing actuated?

A. Yes, I think the use of the word "actuated," in its usual and ordinary sense, implies a movement as resulting from force applied, and, of course, it would include the positive transmission of power, or a forced relation between the source of power and the thing actuated, and also include the force of gravity. A water wheel is actuated by the falling water and produces power. Another example, is the safety stop used in connection with steam engines, and other prime movers, which acts by the force of gravity to stop the engine, when the supporting member is removed so that other members can drop to bring about the stopping action.

XQ. 61. Suppose the movement of a thing is caused by gravity only. Would you ordinarily say that the thing is actuated by some other or mechanical source of power?

A. No, not by some other or mechanical source of power, being actuated by gravity only.

XQ. 62. In the first part of your answer to XQ. 59, you refer to your first thought and then to a more careful analysis. What did you mean by that statement?

A. Simply that when I first looked at the patent drawings, I thought the clutch was compelled to move downwardly by the downward movement of the swivel bolt when the load was taken on. It was only after I had examined the drawings more carefully that I discovered that this was not so, and that the clutch mechanism in its first movement was actuated by gravity.

XQ. 63. What was it that you didn't at first discover?

A. The proper relation of the slot in the upper end of the link 13 to the pin B.

XQ. 64. Then in the device shown in the patent in suit, the load acting on the swivel bolt, as I understand you, doesn't

positively actuate the clutch to bring it down into engagement with the pulley. Is that correct?

A. Only partially correct. The load acting on the swivel bolt positively removes the support which holds the clutch members in their elevated position. This positive action is followed by the falling of the clutch members to a point where engagement can take place with the teeth on the pulley, after which the clutch members are forced into their final clamping position by the backward movement of the pulley.

XQ. 65. What you mean, is it not, that the load acting on the swivel bolt actuates bars 14 and 13, and that gravity actuates the clutch and bar 7?

A. Yes, gravity acts on the clutch and bar 7 to drop the clutch into engaging position with the teeth on the pulley.

XQ. 66. Please state whether or not the bar 7 has three functions, first by way of co-operating in the effective clamping action of the clutch and wheel, second, the elevation or return of the clutch, and third, the trip referred to at the end of claim 15. If it has not these functions, state all the functions of it?

A. It appears to have the three functions named.

XQ. 67. State all of the functions of the bar 13?

A. In its upward movement, the link 13 permits the lever 7 and the clutch member to drop under the action of gravity, after which, when the clutch is moved into final clamping position, it lifts the lever 14, moving it about its pivot 15 into the dotted line position; and in its downward movement, it acts on the lever 7 to throw the clutch mechanism out of engagement with the rope and back into normal position, being assisted in this function by the spring 16.

XQ. 68. In addition to the three functions of the bar 7 mentioned in XQ. 66, does it not have the additional function of causing the movement of the pawl inward from the position it holds while the load is being hoisted to the dotted line position of the drawing of the patent in suit?

A. The function just named, to whatever extent it may exist, was, I considered, included in the first of the three functions named in XQ. 66,—which was

"First, by way of co-oparating in the effective clamping action of the clutch and wheel."

XQ. 69. Has the spring 18 any function besides supporting the slings 22 and tackle 21 when not loaded. If it has any other function, please state it?

A. Yes, it has the additional function of moving the swivel bolt back into its normal position so that the clutch mechanism can be restored to its normal position.

XQ. 70. Has the spring 16 any function other than the one of acting on bars 13 and 7 to return the clutch to its upper position, or disengaging position?

A. The specification states, on page 1, beginning with line 110:—"The clutch is held normally out of engaging position by the spring 16 which is connected to the link 13 and to the frame." Further than this the specification appears to be silent regarding the spring 16.

XQ. 71. In operating hay carriers, about how long is the trip rope?

A. It would probably have to be of varying lengths, depending on the extent to which the mow is filled. Sometimes the trip rope is operated directly from the mow and sometimes from the wagon. In the latter case, it would have to be longer. Then, again, if the barn is built without big beams, the load need be hoisted only high enough to pass onto the mow direct without going over the beam, in which case the trip rope could be still shorter. The length is usually varied by folding and tying up one end. Sometimes, it is allowed to drag without being tied up. An ordinary length might be ten to fifteen feet. It might be as much as twenty feet if the load were being handled close to the track. I have, however, never seen one of the Complainant's machines made under the patent in suit in actual use.

XQ. 72. What size of trip rope has been employed, so far as you have seen?

A. I have seen trip ropes used from three-eighths to one-half inch in diameter. The larger size is preferable, as you can hold it in the hand better when pulling the trip. I have even used larger ropes.

XQ. 73. Do you find anything in the specification of the patent in suit about the slot at the upper end of link 13 in Fig. 1?

A. The specifications appear to be silent in refere the slot in the upper end of link 13.

MORTIMER E. COOLE

Extended and formal notarial certificate and the ture of the witness in the presence of counsel and the no waived by counsel for both parties.

March 29th, 19

Met pursuant to adjournment.

Counsel present as before.

The cross examination of the Expert, Prof. Coole suspended at this point to accommodate Prof. Cooley's engagements, such suspension being by agreement of c The testimony of Allen P. Boyer on behalf of Complaina at this point interspersed.

Allen P. Boyer, having been first duly sworn, depos testified on behalf of Complainant in response to inte tories by Mr. Chappell.

Q. 1. Please state your name, age, residence and o tion?

A. Allen P. Boyer, a manufacturer; residence, G Indiana; age sixty-one years.

Q. 2. What is your relation to the Goshen Mfg. C Complainant, in this suit?

A. I am president of the company, and have g supervision of the business.

Q. 3. It is alleged in the Bill of Complaint that the plainant is an incorporated company. Please indicate w was incorporated?

A. The company was originally incorporated in under the laws of the State of Indiana and reincorporated some changes, in 1902 under the laws of the same state.

Complainant's counsel offers in evidence certified from the United States Patent Office of assignments of th ent in suit, first from Hubert A. Myers to Allen P. Boye second, from Allen P. Boyer to the Goshen Mfg. Co., wi request that they be marked "Complainant's Exhibit Assignments of Patent in Suit," and the same are so re and marked.

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Q. 4. Is the Goshen Mfg. Co., the Complainant, so fa you know, still the owner of the title to this patent in suit?

A. It is.

Q. 5. Please state your acquaintance with Mr. Huber Myers so far as hoisting pulleys or hay carriers is concer so far as the same concerns the invention or structure descri in the patent in suit?

A. If my memory serves me correctly, it was during winter of 1905 and 6 that I was working on a hay carrier, being in need of a pattern maker, some of Mr. Myers' frie recommended him to me as being a fine mechanic and a gen I, or the Goshen Mfg. Company, employed him. He was our employ approximately four weeks. It was his first ini tion into the mysteries of hay carriers, according to his o statement. My experience with him did not fill my antici tion, and so I let him go and secured another man. Later I heard for several weeks about his having a hay carrier invented that was a wonder. I think it was in June of 1 that he saw me and with some misgivings finally showed m little model. I thought it contained a principle or an id when properly developed, that could be made use of to g advantage in the manufacture of hay carriers. I, therefo made a bargain with him by which, for the sum of five hund ($500) dollars; a portion of it I gave him at that time, the b ance was to be paid when a satisfactory patent was secur and all rights thereto were to be assigned to me.

The model produced by the witness is offered in evide with the request that it be marked "Complainant's Exhibit N 10, Myers Original Device."

Q. 6. I bring your attention to "Complainant's Exhi No. 2. Defendant's First Hay Carrier," and "Complainan Exhibit No. 3, Defendants' Second Hay Carrier" and ask y whether or not you can identify those structures as havi been manufactured and placed on the market prior to the brin ing of this suit, and subsequent to the date of issue of t Myers patent in suit? Indicating which of the structures y first learned of, and which, so far as you know, has been m extensively marketed.

A. The Goshen Mfg. Co. purchased the hay carrier re resenting Exhibit 2 as being one manufactured by the Hub

PAGE CUT OFF

A. Myers Mfg. Co., and later purchased a hay carrier shown in Exhibit 3, as being a later structure manufactured by the same firm.

Q. 7. State whether you observed these structures in the market during the interval indicated, and what your information was regarding them; that is, who was the manufacturer?

Mr. Lockwood: Question is objected to in so far as it calls for hearsay or secondary evidence.

A. I very frequently heard of the carriers through our various selling agents. If my memory serves me correctly Exhibit 2 was purchased by us from a hardware dealer in Goshen, Indiana. I think the firm name was Blough Bros. & Mell.

Q. 8. Please state to what extent, if at all, hay carriers embodying, as you understand, the principles of the Myers patent in suit have been marketed up to the present time and by whom, indicating whether or not the date of the patent has been marked thereon? namely, Jan. 21, 1908.

A. So far as I know the only ones bearing that date were those manufactured by the Goshen Mfg. Co., and all carriers manufactured by them have either been marked "Patent applied for" or with the date of the patent, together with the word "Patented."

Q. 9. To what extent have hay carriers embodying this feature been marketed, if you know?

A. I would estimate that the Goshen Mfg. Co. had sold in the neighborhood of five thousand. This is an estimate; it may be more or less.

DIRECT EXAMINATION CLOSED.

CROSS EXAMINATION—By Mr. Lockwood.

XQ. 10. How long have you been president of the Goshen Mfg. Co?

A. Ever since it was re-incorporated and a portion of the time prior to that. As my memory serves me, I was president when the company was incorporated or formed, and after the company had been in operation for about a year, there were some internal dissensions and I got control of the corporation and kept it alive, and during that time, up to the re-incorpora-

tion in 1902, I appeared on the records a portion of the time as president and part of the time as secretary and treasurer. That is according to my memory, as I recall it.

XQ. 11. Please state how long you have had general supervision of the business of the Goshen Mfg. Co?

A. About eighteen years.

XQ. 12. What has been the nature of the business of the Goshen Mfg. Co?

A. The manufacture of hay slings and hay carriers, ladders; lawn swings, etc.

XQ. 13. How long has that company been manufacturing hay carriers?

A. From its inception.

XQ. 14. How long have you been engaged in the manufacture and sale of hay carriers, not only in connection with the Goshen Mfg. Company, but in all ways?

A. About twenty-five years.

XQ. 15. In answer to Q. 5, you state that in the winter of 1905 and 6, you were working on a hay carrier. What did you mean by saying that you were working on a hay carrier?

A. I was developing a new hay carrier, or inventing one, so to speak, differing from the one the Goshen Mfg. Co. was manufacturing.

XQ. 16. Did you ever devise or invent hay carriers of any other kind than in the winter of 1905 and 6?

A. I did.

XQ. 17. About how many hay carriers have you devised or invented?

A. I could only answer this approximately. I have secured a number of patents on hay carriers and made different designs covered by the same patents. As to the exact number, I cannot answer. I presume there have been a dozen or more.

XQ. 18. Please state whether or not you obtained the following U. S. Letters Patent on Hoisting Pulleys and hay carriers. and devices relating to the same:

No. 348,950, dated Sept. 14, 1886, for a hay sling;

No. 377,012, dated Jan. 31, 1888, hay or grain unloader;

No. 409,164, dated Aug. 20, 1889, hay carrier;

No. 517,835, dated April 10, 1894, hay carrier;

No. 661,753, dated Nov. 13, 1900, hay track coupling;

No. 806,771, dated Dec. 12, 1905, hay carrier;
No. 833,195, dated Oct. 16, 1906, track coupling;
No. 835,780, dated Nov. 13, 1906, carrier;
No. 876,935, dated Jan. 21, 1908, carrier;
No. 878,335, dated Feb. 4, 1908, hoisting apparatus;
No. 909,141, dated Jan. 12, 1909, hay sling lock.

A. I would say the above list I think correct, with possibly a single exception, that if it would be considered as such, I think there is one patent included in the list that was assigned to me by Hubert A. Myers.

XQ. 19. I show you U. S. Letters Patent No. 876,935, dated Jan. 21, 1908, and will ask you to state whether or not that patent is for one of your inventions?

A. It is.

Mr. Lockwood: Said copy of the drawings and the specification of said patent is offered in evidence and marked "Defendants' Exhibit, Boyer patent No 876,935."

XQ. 20. State whether or not you considered yourself to be the inventor of the portion of the device shown in this patent No. 876,935, including the frame, pulley 6, and the locking mechanism, including the clutch 16, and the means for operating it?

A. I do not.

XQ. 21. Who was the inventor of that portion of the mechanism?

A. The drawing illustrates that which I purchased from Hubert A. Myers.

XQ. 22. Does the drawing correctly illustrate the invention of Mr. Myers referred to, excepting the omission of the teeth on the pulley?

Mr. Chappell: This is objected to as not material, and as not proper cross examination, going into a subject not pertaining to the direct examination. The witness is not qualified to give expert testimony.

A. In my judgment it illustrates the idea of his invention, with that exception.

XQ. 23. Does it correctly show the connection whereby the swivel bolt moves the clutch so that the pawl would be engaged by the pulley:

Mr. Chappell: Same objection.

A. I am not very familiar with the reading of drawings, and would not want to speak definitely on this matter. It appears in my opinion to illustrate the idea.

XQ. 24. Please state whether or not, after you had made your deal with Mr. Myers about the invention in the patent in suit, you took up the matter of having the same patented?

A. It was one of the considerations in the deal that Mr. Myers was to secure a patent and assign it to me, and the matter was at once taken up with Chappell & Earl, of Kalamazoo, Michigan, who secured the patent, which was assigned to me.

XQ. 25. The first assignment of Myers to you was made when the application papers for the patent were executed by Mr. Myers, was it?

A. That is my recollection.

XQ. 26. Did you take the matter up with Chappell & Earl, or how was the matter taken up about applying for a patent on the Myers invention?

A. My recollection is that I brought this model "Complainant's Exhibit No. 10, Myers Original Device" to Chappell & Earl, who prepared the papers and made the patent application under my direction.

XQ. 27. At the same time you had Messrs Chappell & Earl to apply for the patent No. 876,935, about which I asked you a few minutes ago, did you not?

A. I did on or about that time.

XQ. 28. I show you blue prints in a file wrapper of Messrs. Chappell & Earl, which seems to be their file wrapper and contents for the patent in suit, No. 876,991, and ask you to state whether or not those are the blue prints of the drawing that you had at the time prepared by Messrs. Chappell & Earl for the Myers application?

A. I think it is.

Mr. Lockwood: Said blue prints, with consent of counsel for Complainant, are removed from the file wrapper referred to and offered in evidence as "Defendants' Exhibit A. Myers Original Blue Prints."

Mr. Lockwood: I also offer in evidence copies of two other U. S. Letters Patent of the witness, one num-

bered 835,780, dated Nov. 13, 1906, and the other numbered 878,335, patent of Feb. 4, 1908, and the same are marked "Defendants' Exhibit, Boyer patent No. 835,780,', and "Defendants' Exhibit, Boyer patent No. 878,335," respectively.

XQ. 29. Is the device shown in your patent No. 835,780 the one which you say you were working on in the winter of 1905-6?

A. It is. At least one of the devices. I was working on several different things.

XQ. 30. In the hay carrier shown in this patent No 835,780, was the rope gripped more tightly in proportion to the load carried by the sling?

A. It was.

XQ. 31. In the Myers device which he invented, such as is illustrated in "Complainant's Exhibit No. 10, Myers' Original Device," and "Defendants' Exhibit A, Myers Original Blue Prints," did the load pulling down on the swivel bolt cause the lever 14 and the link 13 to push up on the lever 7 and move the clutch 9 down so that the pawl 10 would be in position to be engaged by a tooth on the pulley if the pulley started backward when the hoisting rope was slackened?

Mr. Chappell: Objected to for the reasons last above stated.

A. It does.

XQ. 32. Was that for the purpose of enabling the load to positively move or actuate the clutch into position for the pawl to catch a tooth of the pulley if the pulley should start backward?

A. It was.

XQ. 33. Positiveness of action, that is, an action directly by the load in bringing down the clutch so the pawl would catch a tooth on the pulley, and so there couldn't be any failure of the clutch to be moved into that position, was one of the main objects and advantages of the Myers invention, was it not?

A. It was.

XQ. 34. I notice that the link 8 and the end of lever 7 between its fulcrum and the clutch are of different lengths, and fulcrummed to the frame away from the center of the pulley.

What effect did that have upon the movement and practical operation of the clutch?

A. I presume that Mr. Myers' idea was that the lever or arms that brought the clutch toward the wheel had to be of different lengths in order that the clutch, when on the rope, would have a full bearing.

XQ. 35. Have you ever, or the Goshen Mfg. Co., ever constructed and sold carriers like what is shown in the patent in suit, Myers No. 876,991?

A. They have made and sold carriers embodying that idea; that is, using two arms to bring the clutch onto the rope.

XQ. 36. When did they begin manufacturing such carriers?

A. As soon after my purchase of this idea from Myers as they were able to get out designs, make patterns and get the castings. I think a few were put out the following year.

XQ. 37. Did you complain to the Hubert A. Myers Mfg. Co. about their infringing your patent?

A. I did, through the Goshen Mfg. Co.

XQ. 38. Do you remember about when that was?

A. I think about October, 1909.

XQ. 39. Did they stop manufacturing and selling hay carriers soon after that?

A. I can't answer that definitely whether they did or not. I was informed that the company got into trouble among themselves, and bought Mr. Myers out. After that, I was informed that a man by the name of Deitrich and Myers made up all the stock that they then had on hand, but whether they quit entirely after that, I am not fully informed. You will understand that this is hearsay evidence.

XQ. 40. Didn't you know that the Defendant company quit manufacturing hay carriers the latter part of 1909, and hadn't manufactupred any since that time?

A. I did not. On the contrary, I have seen a statement somewhere to the effect that they acknowledged they were manufacturing in 1910, if my memory serves me correct. I think I am correct.

XQ. 41. Where did you see the statement you refer to?

A. I think I saw it in some of the pleadings.

XQ. 42. When was it that the Defendant company had the internal trouble that you speak of in your answer?

A. I am not able to answer this definitely.

XQ. 43. Did you and Mr. Peterson ever talk about the matter?

A. Mr. Peterson came to Goshen and wanted to sell the whole business to me.

XQ. 44. When was that?

A. I think it was about a year ago. Am unable to give any positive date at this time.

XQ. 45. Did you understand at that time that they were manufacturing hay carriers, or that they had quit the manufacture of hay carriers?

A. As I remember, on one of the occasions, Mr. Peterson told me that he had sold the whole business and was entirely out of it?

XQ. 46. Was there more than one occasion when you saw Mr. Peterson?

A. There was.

XQ. 47. When was the other time?

A. Having made no notations, and having other matters on my mind, it did not make a sufficient impression so that I can state the date. I think it was during the spring of 1910.

XQ. 48. In your interviews with Mr. Peterson at that time, did you understand that the Defendant company was then manufacturing hay carriers or that it had quit business?

A. Mr. Peterson, as above stated, told me on one occasion that he was entirely out of it. That was when he was negotiating the sale. I can't remember definitely what he did say. I might say, the statement that he was entirely out of it made an impression so that I remembered it as I congratulated him on his good fortune.

XQ. 49. Was he not trying to sell to you the letters patent of Myers that he afterwards got on hay carriers?

A. He wished to include that at the time he was trying to negotiate a sale to me.

XQ. 50. Did you make any offers or have any inclination to buy?

A. I had no serious inclination to buy. I did suggest that

I would be willing to allow him what it would cost to fight the case and knock the patent out.

XQ. 51. You didn't mention any sum did you?

A. I said it would cost a thousand dollars to fight the case, or something to that effect.

Mr. Chappell: This line of examination is objected to as not competent.

XQ. 52. Then do you mean that you practically offered a thousand dollars?

A. Not in so many words.

XQ. 53. But in effect?

A. I suppose in one sense I did. You might so consider it. It was simply a suggestion to avoid litigation.

XQ. 54. In your answer to Q. 5 you said that you thought the device Myers brought to you contained a principle or an idea when properly developed that could be made use of to good advantage. What did you mean by "when properly developed?"

A. I meant in its crude state as it appears in "Complainant's Exhibit No. 10" that it was incomplete.

XQ. 55. Did you improve on it in your subsequent patents, or develop it, as you call it?

A. I think so.

XQ. 56. How much did you pay Myers at first, and when and how much did you pay him thereafter for the invention and patent?

A. I think I paid three hundred dollars and then later on two hundred. I paid him five hundred in all and all the expense of securing a patent.

XQ. 57. Did you look after the case while it was pending in the Patent Office, and consider it at any time with Messrs. Chappell & Earl?

A. I think so. That is my usual custom. However, I could not say definitely in this case.

XQ. 58. Chappell & Earl have been your patent attorneys for some time prior to that time?

A. They had.

XQ. 59. Are you the chief owner of the stock of the Goshen Mfg. Co?

A. I own a majority of it.

of the sheave, the two are locked together so that the clutch can be perfectly smooth and yet effectual, while in the 'Boyer Patent Hay Carrier' it was essential that there be a toothed construction on the clutch, which was much harder on the rope and really not as effectual in holding it.

"Q. 21. Indicate in what way there is economy in the manufacture of the 'Myers-Boyer Device' and the 'Boyer Device, Improved.'

A. There are less pieces in the improved device.

"Q. 22. Indicate what is omitted.

A. There are, in the 'Myers-Boyer Device' four links and an independent pawl which operates the upper clutch, while in the improved device there are but two links, one of them having a pawl attached to it.

* * * * *

"Q. 34 For how long a time have you been familiar with hay carriers?

A. Something over twenty years. I have a knowledge of the same, that is, to a certain extent.

"Q. 35. How long have you been engaged or employed, either by yourself or in connection with manufacturing companies that have manufactured and offered such devices for sale?

A. For twenty years.

"Q. 36. Have you ever designed hay carriers prior to the present device?

A. I have.

"Q. 37. Have any of those ever been patented?

A. Yes sir.

"Q. 38. Are carriers that are in a way comparable with hay carriers ever used for any other purpose?

A. There are several kinds of carriers that are used in warehouses; some go under the name of Merchandise Carriers and Hoisting Pulleys, on tracks, used in the machine shops and various places of industry.

"Q. 39. Please name some of the different makes of hay carriers that you know of, now on the market, indicating the manufacturers thereof?

A. What used to be the J. E. Porter Company of

Ottawa, Illinois; the Milwaukee Hay Tool Company, Milwaukee, Wisconsin; Strickley Hay Tool Company, Jonesville, Wisconsin; F. E. Myers & Bros., Ashland, Ohio; Ney Manufacturing Company, Canton, Ohio; G. W. Bicker, Rochester, N. Y.; Hunt, Helm & Ferris, Harvard, Ill.; Louden Machinery Company, Fairfield, Iowa; Van Sickle, Shortsville, N. Y., if my memory serves me correctly; and Whitman & Barnes Manufacturing Company, at Chicago, Illinois.

"Q. 40. Are these people extensively in the market at the present time, aside from the Ney Company?

A. I think nearly all, if not all, of them are. I know that F. E. Myers & Bro., are in the business very extensively; also the Louden Machinery Company; also Hunt, Helm & Ferris Company.

* * * * *

"Q. 44. Please indicate for how long a time you have been familiar with these various hay carriers you have referred to, that is, by the different manufacturers you have named. Are these manufacturers recent manufacturers, or have they been manufacturing for a considerable time?

A. I think that all that I have named have been manufacturing for at least twenty years, as my memory serves me.

* * * * *

"Q. 52. Please indicate whether or not, prior to the year 1897, you were familiar with any automatic locking device that would lock and hold the load when the draft-rope was slackened?

Witness: Do I understand that just to slack the rope, that would hold it, to simply slack the rope?

Mr. Chappell: Yes.

A. The only one that I call to mind is one that I used for a time and then abandoned; that is what is called the Hercules Hay Carrier, where there was a bridge on the track which held the clutch off the rope, the carrier being between the two latches. I made a space broad enough between those latches that held the carrier in position when elevating the load so that if the

carrier moved a little to one side it would pass the bridge that held the clutch open. With that device the load was held at any point in elevating wherever you wish to stop.

Q. 53. Are you acquainted with any such automatic locking devices?

A. There are a great variety of those. The merchandise carriers referred to have a device of that kind by which the load is held wherever you slack the rope.

By Mr. Miller: Same objection repeated to question and answer.

Witness continuing: That idea is exemplified in a great number of devices,—tackle blocks found on the market embody the same principle, which have been on the market for a great many years.

* * * * *

"Q. 59. In view of the objection of Complainant's counsel, I will ask you to kindly refer to the patents set up in the answer and indicate whether or not you are able to identify any of the structures of those patents as having been manufactured by any of the manufacturers to whom you have referred?

A. One that I can identify as having been on the market is shown in patent No. 351,442, issued Oct. 26, 1886, to Hunt, Helm & Ferris, for Hay Carrier. I do not know that that was the firm name at that time but that is their present firm name. Here is the P. S. Myers Hay Carrier, patent dated Sept. 11, 1894, No. 525,715,—which I have seen illustrated in their catalogue. This structure of patent No. 525,425, issued Sept. 24, 1894, I have seen illustrated in the Louden Machine Company's Catalogue. I cannot state actually as to the identity of this machine, but in their catalogue they show carriers of a character similar to this.

"Q. 60. By whom were the Goshen Hercules Carriers manufactured?

A. They were first manufactured by myself and afterwards by the Goshen Manufacturing Company.

"Q. 61. Are they now being manufactured?

A. Yes."

Mr. Chappell: The question is objected to as calling for matter that is immaterial to the issues in this case, which relate to the claims of the Myers patent in suit, whether the said claims are infringed or not, and whether or not the Defendant company is estopped in view of its conduct from urging the invalidity of the Myers patent in suit. It does not seem that the matter called for, when the claims are considered, can be in any way material to these issues. Testimony was given where the claims of the Tschantz patent were involved and had a bearing on the art at the date of that patent.

Mr. Lockwood: I wish to state that the reason for asking XQ. 67 calling for witness' testimony in the former case was for the accommodation of the witness, who, when the examination reached that point wished to take a train so as to reach home on the same afternoon or evening, instead of remaining over another day, and it was understood, I thought, that the testimony of the witness in the former case could in this manner be introduced on such points as I deemed material. If the witness had remained over, the substance of the answer to this XQ. 67 would have been brought out by ordinary quetsions.

Mr. Chappell: The accommodation of the witness is very much appreciated and the facts testified to in that record would be testified to here in exactly the same way and it is not the disposition of Complainant to raise any objection because the statements did not occur in the present case. The testimony does not seem to be material to the issues here.

A. The printed record in that case shows that, in connection with that matter and in connection with other statements, I so testified. My recollection is that I so testified, and I am not aware of any error or misstatement of fact in the matter quoted.

ALLEN P. BOYER.

Adjournment to 1 o'clock, March 30th, 1911.

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CIRCUIT COURT OF THE UNITED STATES,
DISTRICT OF INDIANA.

In Equity, No. 11,087.

THE GOSHEN MANUFACTURING COMPANY,
Complainant,
vs.
THE HUBERT A. MYERS MFG. CO., and HUBERT A. MYERS.
Defendants.

Suit on MYERS Patent No. 876,991.

PRIMA FACIE PROOFS ON BEHALF OR COMPLAINANT.

Testimony on behalf of Complainant taken pursuant to consent of counsel before Luella G. Greenfield, a Notary Public acting as Special Examiner at the office of Chappell & Earl, in the City of Kalamazoo, Michigan, beginning June 12th, 1911, at 2 o'clock.

Present: Fred L. Chappell on behalf of Complainant.
V. H. Lockwood, for the Defendant, The Hubert A Myers Mfg. Co.

Testimony of Hubert A. Myers.

Hubert A. Myers, having been first duly sworn, deposed on behalf of Complainant and testified as follows in response to interrogatories by Mr. Chappell:

Q. 1. Please state your name, age, residence and occupation?

A. Hubert A. Myers; 29 years old; Goshen, Indiana; draftsman and designer.

Q. 2. What is the street and number of your residence at Goshen?

A. 606 North Main street.

Q. 3. I call your attention to a copy of United States Let-

ters Patent No. 876,991, issued January 21st, 1908, to Hubert A. Myers, inventor, assignor to Allen P. Boyer, and ask you if you are the Hubert A. Myers named as the inventor in that patent?

A. Yes, sir.

Q. 4. Do you know the Hubert A. Myers Mfg. Co., the Defendant company in this suit?

A. Yes, sir.

Q. 5. Please state your relations to that company, and how it came to be called the Hubert A. Myers Mfg. Co?

A. I was president and general manager. I had a factory in Goshen, Indiana, and a few months before I moved to Warsaw, a fire practically destroyed the factory at Goshen, and as I found a building at Warsaw to manufacture swings and ladders, which I was manufacturing, and also a new hay car which I had got up very shortly after selling the one to Mr. Boyer, I went to Warsaw and found a large three story building, equipped with boiler and engine and certain machinery for our use, and interested a Mr. Charles F. Scott, and David A. Peterson in the mannfacturing of the swings and ladder and hay cars. We formed a stock company in Warsaw, with a capital of $20,000, of which I was to have $7,000 of the stock for my patents, ideas and designs on swings, ladders and hay cars, and also $2,200 worth of stock for the machinery and material I brought with me from Goshen, Indiana. A new corporation was formed; I was elected president and general manager, and the corporation was named after me, and served as president and general manager until November 18, 1909, at which time Mr. Peterson was elected as president and general manager, and later I sold my stock to Mr. Peterson, which severed my connection with The Hubert A. Myers Mfg. Co.

Q. 6. I call your attention to "Complainant's Exhibit No. 2, Defendants' First Hay Carrier," and "Complainant's Exhibit No. 3, Defendants' Second Hay Carrier," and ask you if you are familiar with these carriers, and state whether or not they are carriers of the design referred to in your last answer?

A. Yes, sir. They are of the design referred to in my last answer.

Q. 7. State briefly when you designed these hay carriers and when you brought hay carriers of a similar design to the

attention of Mr. Scott and Mr. Peterson? I refer to the exhibits last above mentioned?

A. I think they first saw the cars in August of 1907. But the cars were designed and built in September and October of 1906, and further improvements put on up until 1908, which was our last malleable iron car.

Q. 8. Does either of these exhibits show the structure of 1908?

A. They show the general construction. No. 3 is the exact structure.

Q. 9. How long had you known Mr. Scott or Mr. Peterson, either of them, prior to this time when you exhibited the cars?

A. Not over two weeks.

Q. 10. What showing did you make to them relative to this hay carrier business prior to the organization of the Hubert A. Myers Mfg. Company?

A. I had one car in display at my Goshen office, or model room, placed on a sample track, showing its operation, and at the time Mr. Peterson and Scott viewed my samples of swings and ladders, the hay car was also exhibited.

Q. 11. Did you make any statements relative to the hay carrier business in that connection, to give them an idea of the possibe business that might be done?

A. I showed Mr. Peterson and Scott practically what the hay car business amounted to in the United States.

Q. 12. Did you state whether or not you had had previous experience in the hay carrier business?

A. I stated that I had designed cars before, and that they were proving satisfactory.

Q. 13. Did you state for whom you had designed the car and to what extent it had been successful?

A. I stated that I had designed one for the Goshen Mfg. Company, and the prospect looked very bright.

CROSS EXAMINATION—By Mr. Lockwood.

XQ. 14. I show you copy of Letters Patent of the United States No. 942,735 for Hoisting Device, granted to Hubert A. Myers, Goshen, Indiana, December 7, 1909, and ask you to

state whether or not you are the patentee mentioned in that patent?

A. Yes, sir.

XQ. 15. State whether or not this is the patent which you sold to the Hubert A. Myers Mfg. Company, the Defendant in this case?

A. Yes, sir.

XQ. 16. Is that the patent under which that company understood it was operating?

A. This is the patent taken out after I went to Warsaw, and is an improvement over the cars displayed to Mr. Peterson and Scott at Goshen, and was the car manufactured during the first year's business at the Warsaw factory.

XQ. 17. Is this the patent under which you and the others in the Hubert A. Myers Mfg. Company then understood that you were operating, or did you have some other patent?

A. This is the patent we had up to the second year's business. The improvement on the late malleable iron car had not been covered by a patent application.

XQ. 18. Did the Hubert A. Myers Mfg. Company have or operate under any other Letters Patent of the United States than this No. 942,735?

A. No, sir; they did not.

Said Letters Patent are offered in evidence and marked "Defendant's Exhibit, Myers Second Hay Carrier Patent."

XQ. 19. As I have understood you, the hay carrier shown in this patent is more nearly like "Complainant's Exhibit No. 2, Defendants' First Hay Carrier" than like "Complainant's Exhibit No. 3, Defendants' Second Hay Carrier." Is that correct?

A. Yes.

XQ. 20. Please state when it was that you sold your stock and interest in the Hubert A. Myers Mfg. Company, as nearly as you can recollect?

A. December, 1909.

XQ. 21. Please state whether or not the Hubert A.

Myers Mfg. Company stopped manufacturing hay carriers, and if so, when? If you know.

A. They stopped manufacturing cars in August, '09, but there were parts of cars amounting to 200, or thereabouts, that were practically all finished but painting. Those 200 were painted and shipped some time in January or February, '10. Those cars had been contracted for in September, '09.

XQ. 22. State whether or not you ever knew of The Hubert A. Myers Mfg. Company manufacturing or selling any hay carriers after the dates which you have mentioned?

A. To my knowledge they have not.

XQ. 23. Did you ever inform any person connected with the Goshen Manufacturing Company about the fact that The Hubert A. Myers Manufacturing Company had stopped manufacturing and selling hay carriers, and if so, state when you first gave such information and the circumstances under which the same was given?

A. Personally, I did not.

XQ. 24. Did you have any knowledge of any person connected with the Goshen Manufacturing Company receiving any such information from any one in any way prior to the time when this suit was brought, which was in September, 1910?

A. Mr. David A. Peterson states that he called upon Mr. Boyer twice and had two conferences with him regarding the sale of the Warsaw patent, and if I remember rightly, he well informed Mr. Boyer, he states, that they had ceased to manufacture these cars.

Mr. Chappell: This answer is objected to as stating hearsay, and, of course, is consequently open to serious error. Counsel for Complainant does not happen to be informed as to the exact facts is the reason for interposing objection.

XQ. 25. When did you first learn about the Goshen Manufacturing Company, or Mr. Boyer, complaining about the manufacture and sale of hay carriers by the Hubert A. Myers Manufacturing Company?

A. My first notice was a newspaper article in The Goshen News-Times.

XQ. 26. I show you a copy of the Goshen Daily News-

Times. State whether or not this is what you refer to in your last answer?

A. This was the piece and the paper. October 22nd, 1909.

Mr. Lockwood: Please read into the record the copy referred to. This is as follows:

"PATENT INFRINGEMENT.

Goshen Mfg. Co. taking steps to Protect their Patents.

Yesterday the Goshen Manufacturing Company had at their office a number of expert patent law specialists for consultation and advice, and as a result, they have already served notice on the Hubert A. Myers Manufacturing Company of Warsaw, to cease manufacturing their hay carrier, and to render an account for all they have sold. Notice will also be served on several other hay tool manufacturers, who are infringing on the patents owned by the Goshen Manufacturing Company. This is a matter in which dealers and farmers who sell and use other cross draft hay carriers are deeply interested, as the courts hold them liable as well as the infringing manufacturer."

Mr. Chappell: The answer is objected to as not material.

XQ. 27. State when, if you remember, you next received any complaint from the Goshen Manufacturing Company about the Hubert A. Myers Mfg. Company making and selling hay carriers?

A. The following day I received a notice on the noon mail;—a registered letter, which stated the fact that they thought we were infringing on patent which I sold to Mr. Boyer heretofore referred to, and also on the same day Mr Boyer, Mr. Richardson and Mr. Forney, of the Goshen Manufacturing Company, called at our office, and stated that they had come to make a long-promised friendly call. This call was before the arrival of the registered letter. During the call there was nothing particular said by anyone regarding infringement of the patent. The newspaper piece was mentioned, and

also Mr. Boyer stated that I might expect a registered letter and was surprised that I had not already received it.

XQ. 28. Is the patent you refer to in your last answer as being infringed, this patent No. 876,991?

A. Yes, sir.

XQ. 29. Please state whether or not you believed or understood that the hay carriers which were made by the Hubert A. Myers Mfg. Company did not infringe this patent 876,991, which you sold to Mr. Boyer, and explain the reasons for your belief?

Mr. Chappell: This is objected to as not proper cross examination. The witness is one of the nominal Defendants but has not been served with subpoena. This matter was not gone into on the direct examination because of the position and connection of the witness, who technically, at least, is an unfriendly witness.

Mr. Lockwood: The witness and the Defendant company have been charged with manufacturing and selling hay carriers in infringement of a patent which the witness sold to Mr. Boyer. It is believed that it is conducive to the best interests of this case that the witness have an opportunity to explain his conduct which is charged against him, and it seems hardly necessary to go to the trouble and expense of taking another deposition just for that matter, and for that reason I would like to have the question answered, and it is believed also that the question comes within the spirit of the direct examination in which the sale of this patent and also the infringing devices were inquired about.

Mr. Chappell: Complainant's counsel thinks that it is only proper that Complainant should not be bound by the answer of the witness, hence interposed the objection which under the circumstances would seem to be proper. By this it is not meant to contend that the witness would misrepresent the matter, but it is thought that the proofs of this character should be adduced by the Defendant. There is no objection to the question being asked at this time to avoid the needless calling of the witness, only the Defendant should assume the responsibility therefor.

A. The mechanical construction was vastly different between the Hubert A. Myers car and the Goshen car, and also reports I had from my attorneys went to show that they deemed that there was no infringement in the construction, and at no time did I consider the car was an infringement, owing to the vast difference in construction and mode of operation.

Mr. Chappell: The answer is objected to as stating the opinion of the witness.

XQ. 30. State whether or not "Complainant's Exhibit No. 10, Myers' Original Device" contains what you sold to Mr. Boyer, and all that you sold to him in the way of the invention in hay carriers?

Mr. Chappell: Objected to as not proper cross examination.

A. It embodies all the ideas and patents which I sold to Mr. Boyer, with the exception of giving him the right to manufacture and sell this device in Canada.

XQ. 31. Please state the differences in construction and mode of operation between this model "Complainant's Exhibit No. 10, Myers' Original Device," and "Complainant's Exhibit No. 2, Defendants' First Hay Carrier."

Mr. Chappell: Objected to as not proper cross examination, and for the further reason that the witness is estopped from limiting or destroying the property for which he has received valuable consideration, as evidenced by the patent itself.

A. Exhibit No. 10, when the weight of the load is applied upon the main draft rope, the clutch is forced into operation, or into operative position, for in the rearward revolution of these sheaves the pawl on the clutch is carried downward by the lugs on the side of the sheave, which forms a lock against the rope. In Exhibit No. 2, when the weight of the load is applied upon the main draft rope, it removes the supporting means from the link attached to the clutch, thereby allowing the two ratchets on the side of the clutch, or attached thereto, to be brought into actuation of small pins on the side of the sheave which allows the sheave to move in the direction of elevating a load, and when the sheave is reversed, these ratchets engage in the pins on the side of the said sheave, which are also attached

to the side of the clutch and causes the clutch to move forwardly and clamp tightly upon the hoisting rope.

In Exhibit No. 10, the clutch is supported by means of a connecting link. Exhibit No. 2, the clutch is supported by means of pins resting in a slot or groove in the side of the car.

In Exhibit No. 10, the rope is clutched upon the downward side of the sheave, while in Exhibit No. 2, the rope is clutched upon the opposite side or the upper side of the sheave. In which means, the blocking of the clutch and also the sheave relieves the load of a great deal of the strain. For example, a rope thrown around a large six-inch gas pipe, a small pressure upon the loose end of the rope against the gas pipe will hold considerable weight owing to the friction upon the said pipe, while you have to exert a much greater pressure upon the rope upon the side upon which the weight hangs in order to form enough friction to hold the same load. There are other minor differences which could be mentioned.

XQ. 32. Please state now what you consider to be the difference in structure and operation between this Exhibit No. 10, which you sold to Mr. Boyer, and "Complainant's Exhibit No. 3, Defendants' Second Hay Carrier?"

Mr. Chappell: Same objections as to the last question.

A. Exhibit No. 10, the clutch is forced into actuation when the weight of the load is applied upon the draft rope. Exhibit No. 3, the clutch was allowed to drop into actuation by gravity when the weight of the load is applied upon the draft rope.

Exhibit No. 10, the pawl or ratchet upon the side of the clutch, which engages in the lugs on the side of the sheave, is a separate piece from the clutch. In Exhibit No. 3, the clutch and dogs were of one piece.

In Exhibit No. 10, the supporting links, which support the clutch, were of two pieces, while in Exhibit No. 3, the supporting means and the clutch were all in one.

In Exhibit No. 10, the weight of the load was overcome or regulated by means of a spring, or springs. In Exhibit No. 3, the weight of the load was regulated by means of weights which acted the same as a pair of scales.

In Exhibit No. 10, the clutch and dog and supporting

means were three distinct members, while in Exhibit No. 3, they were all in one; that is to say, the clutch, the dogs for engaging in the sheave lugs, and the supporting means for the clutch, were all one piece. There are a good many other differences, but these are the main ones.

XQ. 33. Examine "Complainant's Exhibit No. 10," and explain the function or purpose of the slot at the connection between the parts corresponding to the parts in the patent in suit, No. 876,991, numbered 7 and 13.

Mr. Chappell: The objections last above made are repeated.

A. In answer to this question, will say that Exhibit No. 10, is a very crude model and made in a hurry. Connecting link No. 13, the holes were drilled a little too close to each other, and the top hole on No. 13 was filed a little oblong owing to a mechanical error in the construction of said exhibit.

XQ. 34. Then do I understand that the slot in Exhibit No. 10, numbered part 13 thereof, was intended for no purpose, or, I will ask you, would a reasonable enlargement of the hole forming a part of that connection be desirable to enable a hay carrier to operate satisfactorily in case the ropes which might be employed therewith from time to time varied in diameter to some extent?

Mr. Chappell: Last objection is repeated.

A. An enlarged hole would have no difference whatever in the operating of the said car or hoisting device in case the outside distances were not in excess to those on the said Exhibit.

XQ. 35. Suppose the diameter of the ropes should vary. Would that render desirable for the connection between the parts 7 and 13 to be a little loose so that the device will accommodate itself to such various ropes?

A. It would not.

XQ. 36. Is "Complainant's Exhibit No. 10" made, and was it intended, to operate in such manner that the weight of the load on the eye-bolt would, through intermediate mechanism, forcibly move the clutch into a position where the pawl will engage teeth on the wheel?

A. It was.

XQ. 37. Was that one of the main objects of your inven-

tion, and so understood between you and Mr. Boyer?

Mr. Chappell: Objected to for the reasons last above stated.

A. In Exhibit No. 10, it was my intention to force the clutch into position of operation by means of the weight of the load being applied upon the draft rope. There was no direct understanding between myself and Mr. Boyer as to the weight of the load forcing the clutch into operation.

XQ. 38. What he bought and you sold, as I understand it, then is a machine operating in accordance with the "Complainant's Exhibit No. 10," which you, at the time of your sale, used to express your idea or invention at that time?

A. Exactly.

XQ. 39. In claims 15, 16, 17, 18, 19, 24 and 25 of the patent in suit, No. 876,991, reference is made to the clutch being "actuated" to bring the pawl into engagement with the pulley, or means for "actuating" the clutch to bring the pawl into engagement with the pulley. State whether or not in that language and in those claims you meant means for positively forcing the clutch into a position to engage the pulley?

Mr. Chappell: The objections last above stated are repeated, and I desire my objections to apply to the entire line of examination without cumbering the record with objections.

A. It was.

XQ. 40. State whether or not it was the understanding or expectation, or decision, of the Hubert A. Myers Manufacturing Company when it quit manufacturing hay carriers, and at the time, or about the time when you left it, to abandon the actual manufacture of hay carriers?

A. It was not the decision of the company at that time to abandon the manufacture of hay cars, but owing to our financial condition after the publication of said piece referred to heretofore in the Goshen Daily News-Times, we were forced to abandon the manufacture of hay cars as the publication of said piece or article referred to caused the banks to draw in what loans we already had and refused to give any additional help to us in a financial way until said patent case or infringement claims were proven out, but at the time I left the company, arrangements were being made to organize, or interest addi-

tional capital and go ahead with the business, as we had been assured that the patent was non-infringing.

XQ. 41. State whether or not the effort to obtain additional capital, made at the time you left the company, failed, and they ceased further to engage in the actual manufacture and sale of hay carriers, and so far as conducting business is concerned, actually went out of business and closed the factory?

A. At the time I ceased my connection with the company, Mr. Peterson had a deal or proposition practically finished wherein additional capital was to be raised in the city of Warsaw, and the said deal did mature, but owing to diffeernces, of which I am not acquainted, they did not proceed as had been planned at the time I severee my connection. To my knowledge the factory was not closed as they were receiving orders for swings and ladders that had already been made and were carried in stock.

XQ. 42. State whether or not there is any difference in the mode of operation of "Complainant's Exhibit No. 3, Defendants' Second Hay Carrier," and of the form shown in the patent in suit at the time of discharging the load, or in the matter of the pawl disengaging the wheel, and if so, state what it is?

A. In Exhibit No. 10, when the load is released, the clutch returns to its normal position by means of a spring. In Exhibit No. 3, when the load is released, the clutch remains in a clutched position until the loose end of the draft rope is pulled backward.

XQ. 43. Is there any other fact or circumstance bearing upon the matters which have been inquired about in this deposition, and which have not been stated or brought out by you, and if so, please state the same?

A. In answering these questions, I have brought out in detail all the facts involved therein, and have answered them to the best of my knowledge.

XQ. 44. State whether or not in the summer of 1907 you showed Mr. Boyer the hay carrier which you designed and got patented in your second patent, No. 942,725?

Mr. Chappell: Objected to as not proper cross-examination and as immaterial.

A. No, I did not show him the exact construction shown in this patent, as this patent was designed and made at War-

saw, Indiana, but I did show him a structure similar or practically the same.

XQ. 45. What, if anything, did he say then about it infringing his patent which was bought from you?

Mr. Chappell: Objection repeated.

A. Not a word that I know of or can remember.

XQ. 46. Did you tell George B. Richardson, of the Goshen Manufacturing Company, in February or March, 1910, that you had quit the Hubert A. Myers Mfg. Company, and that had gone or was going out of business, and that it was a good chance to buy the patent and the material they had left, for $3,000, or substantially that, and if not exactly that, what did you say to him about this matter, if anything, at that time?

Mr. Chappell: Objected to as not proper cross-examination and as immaterial.

A I met Mr. Richardson at the garage one noon some time in March, and stated to him that the entire patents, patterns, and material on hand could be purchased from the Warsaw Company for $3,000, and suggested that it would be a good proposition for them, as the Warsaw company could not finance the manufacture of them, but that there was a great demand for the car and that they could make back the $3,000 in one season's business. He agreed to consider the proposition.

RE-DIRECT EXAMINATION.

RDQ. 47. Did you transfer any patents relating to swings or ladders to the Hubert A. Myers Manufacturing Company?

A. I did.

RDQ. 48. Can you give the dates of issue of the patents and when they were applied for?

Mr. Lockwood: Question is objected to as immaterial.

A No. 909,315, Jan. 12, 1909; Ladder filed Jan. 9, 1908 and No. 946,558, Jan. 18, 1910; Swing, filed Oct. 20, 1906.

RDQ. 49. Do you know when the Hubert A. Myers Mfg. Company first received notice of the patent in suit?

A. The first notice the company had from the Goshen Manufacturing Company was through the Goshen Daily News-Times, wherein they published the piece heretofore mentioned, and this piece was brought to our notice October 28th, '09.

RDQ. 50. The company did not know of the patent prior

to that time? I refer to the patent that suit is here planted on.

A. The company knew that I had designed a car or hoisting device and had sold the same to Mr. Allen P. Boyer of the Goshen Manufacturing Company, and were well acquainted with the general construction of the car as it had been exhibited to them in the catalogue of the Goshen Manufacturing Company, and they knew that I was the inventor of a hoisting device which I had sold to the Goshen Manufacturing Company.

Re-cross Examination.

RXQ. 51. Did the Goshen Manufacturing Company manufacture hoisting devices exactly like what was shown in the patent in suit, No. 876,991?

A. No, they did not. They made some changes.

RXQ. 52. State whether or not, after Mr. Boyer saw the improved car or hoisting device which you showed him in 1907, I believe it was, the Goshen Manufacturing Company changed its hoisting devices from the form in which the load positively forces the clutch into position to engage the wheel to the form in which the clutch is moved by gravity or other means, than the load, into engaging position?

Mr. Chappel: Objected to as incompetent and immaterial.

A. They did.

RXQ. 53. Wasn't it this latter style of hay carriers which the Goshen Company showed in its catalogues, and never showed in any catalogue any carrier like that shown in the patent in suit, No. 876,991?

Mr. Chappell: Objection repeated.

A. To my knowledge they never showed in any catalogue the exact construction of the drawings attached to patent No. 876,991.

RXQ. 54. State whether or not your explanation, if you made any, to Mr. Peterson or Mr. Scott prior to the publication of this newspaper article, was to the effect that you had sold Mr. Boyer an improved hay carrier containing the construction and having the mode of operation of this model, "Complainant's Exhibit No. 10?"

A. I did.

HUBERT A. MYERS.

Subscribed and sworn to before me this 12th day of June, 1911.

LUELLA G. GREENFIELD,
Notary Public.

My Commission expires August 17th, 1911.

Extended Notarial certificate waived by counsel for both parties.

IN THE UNITED STATES CIRCUIT COURT,

For the District of Indiana.

The Goshen Manufacturing Company,
vs.
The Hubert A. Myers Manufacturing Company and Hubert A. Myers.
No. 11,087.

DEPOSITIONS IN BEHALF OF DEFENDANT COMPANY.

Depositions taken in behalf of the defendant company, The Hubert A. Myers Manufacturing Company, in pursuance of the attached notice and consent of counsel, before Miss Gertrude H. Boink, Notary Public, acting as Special Examiner, at the office of V. H. Lockwood, 415 Lemcke Building, Indianapolis, Indiana, beginning at 10:00 Tuesday morning, August 8, 1911.

Present: Mr. Fred L. Chappell for complainant; Mr. V. H. Lockwood for defendant company.

DAVID A. PETERSON, being produced as a witness and having been first duly sworn, testified as follows:

Examined by Mr. Lockwood.

Q. 1. Please state your name, age, residence and occupation.

A. David A. Peterson, age 52 years, Warsaw, Indiana; occupation, lumber dealer.

Q. 2. Are you connected with the Hubert A. Myers Manufacturing Company, of Warsaw, Indiana, which is the defendant company in this case?

A. Yes, sir.

Q. 3. What is the nature of your connection?

A. President and general manager.

Q. 4. Have you been connected with it since it was formed?

A. Yes, sir.

Q. 5. Please give a history of that company and its business

and the circumstances leading up to its engagement in the manufacture of hay carriers.

A. The company was organized in September, 1907. About sixty days prior to the organization, Mr. Myers came before the Commercial Committee of Warsaw, of which I was a member, stating that he wished to locate in Warsaw, giving in detail the different patents he was the owner of, and the line that he wished to manufacture, and asked for assistance from them.

(2) The Commercial Committee as a committee declined to have anything to do with it, but several individual members of the committee became interested in Mr. Myers' proposition, which resulted in two of us going to Goshen, Mr. C. W. Scott and myself, for the purpose of investigating, with the result that the Myers Manufacturing Company was organized in September, 1907.

(3) In looking at the different properties of Mr. Myers, he showed us in particular a patented hay carrier, also stating that it was his second invention in that line, the first one of which had been sold to Mr. Boyer, of the Goshen Manufacturing Company, at the same time claiming that the invention he now had was far superior to the one disposed of to Boyer, entirely different and in nowise infringing the former patent. He had several other inventions in swings, ladders and track joints.

(4) At the starting of the company we made only ladders and lawn swings. It was not until the spring of 1908 that we commenced making hay carriers and put out but a very few, I think, 25 that year.

(5) The following fall of 1908, we commenced making hay cars and made about five hundred cars, of which about three hundred were put out the following winter and spring. The cars were largely disposed of through Mr. C. F. Dietrich, of Bryan, Ohio, and in August of 1909, we contracted with Mr. Dietrich to deliver to him five hundred cars for the season of 1910, and be delivered as called for.

(6) A notice from Mr. Boyer or the Goshen Manufacturing Company, in October, 1909, that we were infringing their patent and also financial embarrassment put a complete stop to our manufacturing. However, to save trouble and a suit with Mr. Dietrich, with whom we had made a contract to deliver the aforesaid cars, we gave him the use of the shop and all the parts and unfinished cars, amounting to about 200, which he made up himself and shipped during the winter of 1909 and 1910. A number of efforts had been made, especially by myself, for the

disposal of the Myers Manufacturing Company plant, having taken it up personally with V. L. Ney, of Canton, Ohio; F. E. Myers & Brothers of Ashland, Ohio; Whitman & Barnes of Chicago, also with Mr. Boyer himself. Our efforts were unsuccessful, mainly on account of notice which had been sent us by Mr. Boyer to the effect that we were infringing his patent.

(7) However, in March, 1910, the entire stock and all the patents, with the exception of the hay car, was disposed of to a Mr. Bowman.

Q. 6. In the fifth paragraph of your answer to Q. 5 you stated that you commenced making hay cars in the fall of 1908 and made about five hundred. State whether or not in that five hundred you meant to include the two hundred which were finished and put up in the winter of 1909-10 by Dietrich.

A. They were included.

Q. 7. In the sixth paragraph of your answer to Q. 5 you spoke of the Goshen Manufacturing Company or Mr. Boyer giving you notice that you were infringing their patent. State whether or not the patent referred to in that notice was the patent in suit.

A. It was.

Q. 8. You state that that notice of infringement and your financial embarrassment put a complete stop to your manufacturing. Have you ever manufactured any hay carriers since that time?

A. No, sir.

Q. 9. Did you, in October, or the latter part of 1909, decide not to manufacture any more hay carriers?

A. Yes, we were then trying to sell the entire Myers plant, but we never intended to manufacture any more hay carriers.

Q. 10. Please state whether or not Mr. Boyer, or any one connected with the Goshen Manufacturing Company, had knowledge of the business you were conducting, or that was being conducted by the Hubert A. Myers Manufacturing Company in 1907, 1908 and 1909.

A. Yes. Mr. Boyer and his representative had both visited our plant during this period. By representative I mean a salesman, and Mr. Richardson, who were with Mr. Boyer. My recollection is that Mr. Boyer was at our place in the early summer of 1908 and again a short time prior to the serving of the notice on us. The last time he was accompanied by Mr. Richardson and another, but who it was I am not able to state.

(2) In the spring of 1908 his salesman, in whose territory

Warsaw is located, called on me and in company we went over to the Myers' plant, visiting in the office of Mr. Myers and going through the plant with him.

Q. 11. Please state what, if anything, was said by Mr. Boyer and the salesman in their visits in the spring of 1908 about the patent in suit or about your company infringing, or anything relating to that matter.

A. There was nothing said about it, but I believe there was a conversation regarding the patent on lawn swings, in which the Myers Company and a Mr. Medill, of Goshen, were then having some controversy at the Patent Office at Washington.

Q. 12. Are we to understand, then, that on the occasion of their visit in 1908, they made no complaint about you infringing the patent in suit?

A. None whatever.

Q. 13. Did they at that time see or learn about the style of the hay carriers you were making?

A. They were there on the floor of the shop, and could be inspected. They looked at them.

Q. 14. In paragraph seven at the end of your answer to Q. 5 you say that in March, 1910, you sold all of the patents with the exception of the hay car. Do you mean with the exception of the hay car patent?

A. Yes.

Q. 15. You also spoke of selling to Bowman in March, 1910, the entire stock. Was that after the 200 cars that Dietrich made up had been taken away?

A. By the "entire stock" is meant the other lines of goods made by the Myers Manufacturing Company, long ladders, step ladders, lawn swings and the necessary machinery for making them.

Q. 16. Please state the proportion of interest in the Hubert A. Myers Manufacturing Company which was held by you, Myers and others from the beginning up to the present time.

A. The stock originally was issued to Mr. Myers at ninety shares; Mr. C. W. Scott, one share; Joseph S. Baker, one share; Bertram Shane, one share; myself, thirty shares.

(2) Mr. Myers' stock was increased to ninety-three shares by the addition of material brought from Goshen in the spring of 1908. Mr. H. E. Kinsey came into the company in the fall of 1908, taking ten shares, which was increased from time to time, and he now holds thirty-two shares. Mr. Shane and Mr. Baker have sold their stock and are out of the company. Mr.

Scott retains his one share, while my stock has been increased to sixty-nine shares. Mr. Myer's stock has been taken up by the company.

Q. 17. Did Mr. Myers pay any money into the concern for his stock?

A. None. It was represented wholly by patents and a small amount of material.

Q. 18. When did Mr. Myers leave the company or sell his stock?

A. I think in November, 1909.

Q. 19. As I understand, since that time you have held sixty-nine shares, Mr. Kinsey thirty-two shares, and Mr. Scott one share, and that you have been the only stockholder since Myers left the company. Is that correct?

A. Yes, sir.

Q. 20. Who furnished the money for the company?

A. I furnished most of it, Mr. Kinsey's stock is represented wholly by cash, as is also the stock of Mr. Scott.

Q. 21. What was Myers' position in the company while he was with it?

A. President and general manager.

Q. 22. How long have you been president and general manager?

A. Since October, 1909.

Q. 23. State whether or not Mr. Boyer or any one connected with the Goshen Manufacturing Company ever learned that the Hubert A. Myers Manufacturing Company had ceased to manufacture hay carriers, and if so, state when and how such information was gained by them.

Mr. CHAPPELL: Objected to as immaterial and not competent, and as calling for hearsay testimony.

A. I called on Mr. Boyer twice during the early part of 1910, probably January or February, with a view to selling him the hay car patent, at which time I went over the Myers' situation and stated to him that we were practically dead as far as the manufacturing was concerned, as we had not turned a wheel since the previous September. Farther than this, I am unable to say that he has had any notice.

Q. 24. Please state whether or not any notice was published in the newspapers of Goshen, Indiana, about the Hubert A. Myers Manufacturing Company infringing patents of the Goshen Manufacturing Company on their hay carrier.

A. A notice did appear in both papers to that effect about the 12th or 15th of October, 1909.

Q. 25. Has Mr. Myers been connected with the Hubert A. Myers Manufacturing Company since November, 1909, in any capacity, as a stockholder, officer, employee, or otherwise?

A. He has not been connected since he sold his stock, which I believe was in November, 1909.

Direct examination closed.

Cross-Examination by Mr. Chappell.

X-Q. 26. How do you know Mr. Myers sold his stock in November, 1909.

A. The negotiations were carried on by myself. I made the deal with him for the company.

X-Q. 27. How much was he paid for his stock?

A. One thousand dollars.

X-Q. 28. How many shares of stock, and what was the face value of the stock?

A. Ninety-two shares. There was no particular value placed on the stock. He offered to take that amount in order to get the ready cash to exploit a new invention he had.

X-Q. 29. What was the face value of each share of stock? Were they $100 shares or $10 shares, or what?

A. One-hundred-dollar shares.

X-Q. 30. Give the exact date of the suspension of manufacturing of the Hubert A. Myers Manufacturing Company, and the reason for it, so far as you know.

A. We shut down in September, 1909, to make some needed repairs, and the business was practically over with for the season. We were also negotiating, at that time, with a Mr. Hartzler, of Goshen, who was intending to take a majority of the stock of the Myers Company. This matter was pending at the time the company received notice from The Goshen Manufacturing Company, when Mr. Hartzler then cut off all further consideration of the proposition.

The failure of the deal with Mr. Hartzler, also the information from our home bank that they were afraid we were in bad, so discouraged the stockholders that there was no further effort made to resume operations, excepting to make a sale of the plant as a whole.

X-Q. 31. Was Mr. Hartzler a wealthy man at the time?

A. My understanding was that he was worth anywhere from $10,000 to $15,000.

X-Q. 32. When did you first show the hay carrier that was being manufactured by the Hubert A. Myers Manufacturing Company to Mr. Allen P. Boyer?

A. I can't say that we ever called his particular attention to it.

X-Q. 33. When did he first see it, so far as you know?

A. As far as my positive knowledge is concerned, I don't know as he has ever seen it.

X-Q. 34. You say Mr. Boyer was at your plant in the early summer of 1908. What did he state was the object of his visit?

A. He called it a social visit.

X-Q. 35. Did you have any hay carriers put up in your display room at that time?

A. I am not positive about that. That was about the time we first commenced making hay cars.

X-Q. 36. You don't know that Mr. Boyer saw the hay carriers at that time, is that right?

A. I do not know that he did.

X-Q. 37. Was anything said about hay carriers at that time?

A. I am not positive that there was.

X-Q. 38. When did the salesman visit the plant?

A. Some other date.

X-Q. 39. Was that before or after Mr. Boyer's visit?

A. I am inclined to think it was after, because we showed him the car and explained it to him and we had quite a lengthy conversation regarding it.

X-Q. 40. What was the object in showing it to him?

A. He expressed an interest in all our different articles for the reason that it was the same line of business he was handling, and Mr. Myers was an old acquaintance of his.

X-Q. 41. Did you handle a load with the hay carrier at that time?

A. No.

X-Q. 42. You don't remember the name of this salesman?

A. No, sir.

X-Q. 43. Please describe him briefly.

A. I don't believe I am able to do that. As I am in the lumber business, goods that are manufactured by the Goshen Manufacturing Company are considered a part of our line of goods. This salesman called on me for the purpose of selling the Goshen make of ladders, when I told him that I was interested in a

ladder plant and in further conversation asked him to go over and visit our place, which he did.

X-Q. 44. Did he seem to be the salesman who handled hay carriers as well as the ladders and that sort of thing?

A. I am unable to say as to that. As we do not retail hay carriers, I wouldn't have been interested in that particular item.

X-Q. 45. Did any one from the Goshen plant call at the plant of the Hubert A. Myers Manufacturing Company after this date and prior to the visit of Mr. Boyer and Mr. Richardson?

A. Not to my knowledge.

X-Q. 46. When did you begin sending out advertising matter of the hay carrier made by The Hubert A. Myers Manufacturing Company?

A. In the early summer of 1908.

X-Q. 47. When did you sell the first hay carrier?

A. In the early summer of 1908.

X-Q. 48. How many did you sell in 1908?

A. I think it was twenty-five.

X-Q. 49. Where were those sold principally?

A. Kosciusko, Elkhart and St. Joe county.

X-Q. 50. Did Mr. Boyer say he was about to serve notice on you when he visited you the last time in October, 1909?

A. He said that he had served notice.

X-Q. 51. What occasioned the delay in filing application for a patent by Mr. Myers for the hay carrier invention which he exhibited to you during your early negotiations?

A. That was an idea of Mr. Myers, he maintaining that the longer the delay in getting the patent the longer the life of the patent would be.

X-Q. 52. I was inquiring about the delay in making the application, not the delay in issuing. What was the reason for that?

A. I don't understand that there was any delay in that.

X-Q. 53. As I understand you, this invention was exhibited to you in the summer of 1907, and I am informed the application was filed April 4, 1908. The question is, why this delay?

A. I am unable to say as to that. I wasn't aware that it was delayed quite that long. The application was to have been filed after the formation of the company.

X-Q. 54. Do you remember how much stock was allowed to Myers for that particular invention?

A. No, sir. I believe that the items of patents were not specialized, one price being made on all of them.

X-Q. 55. When Myers was before the Commercial Committee of Warsaw, what did he say about the commercial prospects of a manufacturing business of this kind?

A. He was quite enthusiastic and cited us to a number of institutions manufacturing this same line of goods that had been very prosperous, and he felt that he had articles superior to all these others.

X-Q. 56. Did he specifically mention the Goshen Manufacturing Company?

A. Yes, sir, as well as the Goshen Churn and Ladder Company.

X-Q. 57. What did he say about the Goshen Manufacturing Company?

A. That they had large sales, good profits and were making money.

X-Q. 58. Did he not state that he had invented some of their line?

A. Yes, he claimed to have invented their hay car.

X-Q. 59. Did he say they were making it at that time?

A. Yes, sir.

X-Q. 60. When did the Goshen Manufacturing Company change from the hay carrier they were making at that time, if they made any change?

A. I am unable to state.

X-Q. 61. What change did they make, if any, so far as you know?

A. All I know of their changing is from hearsay.

X-Q. 62. When did you receive information that the Goshen Manufacturing Company was making the structure complained of in the suit of the Hubert A. Myers Manufacturing Company against the Goshen Manufacturing Company now pending in the United States Circuit Court for the District of Indiana, said patent being U. S. patent No. 942,375 of Dec. 7, 1909?

MR. LOCKWOOD: This question is objected to as being immaterial in this case and belonging, if at all, to the other case between the parties.

A. Mr. Myers spoke of the matter a number of times during the time we were making cars and this covered a period from probably the summer of 1908 until he severed his connection with the company.

X-Q. 63. Then the change must have been made by The

Goshen Manufacturing Company some time in the fall of 1907 or early in the spring of 1908. Is not that right?

MR. LOCKWOOD: The question is objected to as immaterial.

A. I am not able to give any specific dates regarding this matter.

X-Q. 64. As I understand your testimony, when Mr. Myers began his negotiations he stated the Goshen Manufacturing Company was manufacturing a hay carrier under a patent which he had sold them. After that the Goshen company began trespassing or modified its structure so that you considered it an infringement on the Myers patent No. 942,375, above referred to. What was the particular thing changed by the Goshen Manufacturing Company that led you people to believe that they had begun trespassing on your rights?

A. I am unable to state that also.

X-Q. 65. Why are you unable to state?

A. In the management of the manufacturing my interests were those only of a stockholder and director. I was not familiar with the business, nor any of its details, and my knowledge of the infringement you speak of is derived only from information received from those who were qualified to judge.

X-Q. 66. Did anybody say to you that the Goshen Manufacturnng Company had made a change in its structure from the time you had made the negotiations up to the date of the issue of the patent No. 942,735? I refer to your early negotiations with Mr. Myers.

A. Yes, sir.

X-Q. 67. Who told they had changed, and what was said?

A. Mr. Hubert Myers told me and he said that they must have a good car, as the Goshen people were making one just like it.

X-Q. 68. When did this conversation occur?

A. I think this announcement was made to me about the first time he spoke of this matter.

X-Q. 69. When was that and what brought the subject up?

A. This was probably about the summer of 1908, and I recall it being a short time after we commenced making cars. It was spoken of various times also during the life of the Myers company. No particular occurrence brought the subject up, more than a general interest on all of this line of work.

X-Q. 70. When did you make protest to the Goshen Manufacturing Company about it for the first time?

A. I think not until the matter was brought up here in Indianapolis.

X-Q. 71. That is, you served no notice prior to filing suit. Is that it?

A. Yes, sir.

X-Q. 72. Did you make any cars like those illustrated in this patent, No. 942,735, of Dec. 7, 1909. I call your attention to the drawing, so that you can see what it is.

A. No, sir.

X-Q. 73. All that you constructed were provided with a weight, were they not?

A. Yes, sir.

X-Q. 74. Did the Goshen Manufacturing Company provide any with a weight?

A. I don't believe they do.

X-Q. 75. The question is, did they?

A. I don't know that they did.

X-Q. 76. Did Mr. Myers ever explain to you why the hay carrier he invented and sold to the Hubert A. Myers Manufacturing Company avoided the patent in suit here?

A. Yes.

X-Q. 77. What did he say about it?

A. I can't remember that now.

X-Q. 78. State the substance of what he said as well as you are able.

A. As stated in an answer a few moments ago, I am not a mechanic, and these things can be explained to me and yet not carry very much information to my mind. I might have been given a very specific explanation of the differences or similarities of the two cars or patents, but I am unable to give any definite answer to this question.

X-Q. 79. Was not one of his propositions that there was a difference because he used a weight while the Goshen people used a spring?

A. Very likely this was one of the distinguishing differences.

X-Q. 80. At the time of making the purchase of Mr. Myers and organizing the Hubert A. Myers Manufacturing Company, did you take counsel with any patent lawyer or anyone familiar with patents to know just what the rights of the Goshen Manufacturing Company were and whether you were coming near them or not?

A. No, sir.

X-Q. 81. You took Mr. Myers' word for it all then?

A. Yes, sir.

X-Q. 82. You took Mr. Myers' word for it that the Goshen Manufacturing Company had changed their structure after the organization of the Hubert A. Myers Manufacturing Company. Is that right?

A. Yes, sir.

X-Q. 83. Did the Hubert A. Myers Manufacturing Company continue the manufacture of swings and ladders after October, 1909?

A. No, sir.

X-Q. 84. Why did they discontinue that?

A. I think I answered that question fully that the failure of negotiations with parties whom we thought had capital to operate it, the discouraging remarks from our bankers whom we were depending upon for capital, had a discouraging and demoralizing effect on all the stockholders.

X-Q. 85. Really, then, the hay carrier business was the backbone of it all. Is that right? And the other items, swings and ladders, were merely an incident?

A. I can't say that that was the case. We were, however, expecting and hoping for great things from our hay carrier.

X-Q. 86. What was there about the carrier that impressed you so favorably? Kindly indicate what its quality was that inspired you with so much confidence.

A. The report from those who were using the car and the agents who were selling it had been so flattering that we felt sure there must be merit in the car.

X-Q. 87. What did they say about it. What did they say it would do that other cars would not?

A. It never was claimed, I guess, that it would do anything different from other cars, only the manner of doing it was so simple and accurate and positive that all those who had the car firmly believed that it was superior to other cars doing like work.

X-Q. 88. But you don't remember the details. Is that right?

A. I don't exactly understand that question.

X-Q. 89. Your language indicates that there were favorable reports, but you do not indicate the substance of the reports or the details of them. What feature, if any, did these reports touch upon?

A. The reports speaking of the car as being a success doing the work perfectly and easily, wouldn't particularly need to speci-

fy what particular part of the car was superior, in order to give confidence to the stockholders.

X-Q. 90. Was there any automatic feature referred to? If so, what?

A. I can't say that there was.

X-Q. 91. You don't know what the features were that impressed the users then?

A. No, I suppose it was the general construction and the combination of all the features.

X-Q. 92. So far as you know the car of the Hubert A. Myers Company is the same in operation as that made by the Goshen Manufacturing Company. Is that right?

A. I can see that they don't look alike.

X-Q. 93. I was inquiring about their operation. Wherein does the one made by the Hubert A. Myers Manufacturing Company differ from that made by the Goshen Manufacturing Company, if you know of any difference?

A. They do not appear to me to operate alike. There seems but very little similarity in the mechanism of the two.

X-Q. 94. You said a little while ago that you were unable to state anything about the mechanism and I was shaping my questions as to the operation. What was the difference in operation, so far as you have observed?

MR. LOCKWOOD: This question is objected to as the witness is not understood to be a mechanical expert, or even a mechanic, or as having personally made or operated any of the hay carriers. He is a lumber merchant.

A. I would be unable to give an explanation of the working of either car, much less the difference of the working of two cars.

X-Q. 95. You say in X-Q. 93 the answer, "There seems but very little similarity in the mechanism of the two." Please enumerate the things that strike you as so dissimilar.

A. They don't look alike. The parts that appear in one car don't seem to be in the other car. For that reason I would suppose that the cars were not alike.

X-Q. 96. Why did Myers adopt a weight in place of a spring, if he told you that?

A. He stated that he thought it was more practical.

X-Q. 97. Why?

A. Because the weight was always positive while a spring was liable to weaken and get broken.

X-Q. 98. Did he say the weight would do the same work?

A. Yes, sir.

X-Q. 99. What other dealers did you sell to besides Dietrich, of Bryan, Ohio?

A. I am unable to give the names, but I recall that there was a dealer in Columbia City, Bourbon, Plymouth, Elkhart, South Bend, New Paris, Syracuse and some other towns, who handled our car.

X-Q. 100. Which, if any, of these dealers declined to purchase further from you because of the notice from the Goshen Manufacturing Company that you were trespassing upon the patent here in suit?

A. The Elkhart dealer. This is the only one I can positively state now.

X-Q. 101. What was his name, and what did he say?

A. I couldn't give his name now, and he stated that he had received a marked copy of a Goshen paper containing the item of the question of infringement proceedings which was brought by the Goshen Manufacturing Company and to save himself from getting into trouble he would not handle our cars at all.

X-Q. 102. Did he state this orally or did he write a letter?

A. He wrote a letter.

X-Q. 103. Can you produce the letter?

A. Yes, sir.

X-Q. 104. I wish you would do so and have it marked by the Notary.

X-Q. 105. The other dealers seemed willing to purchase, did they not?

A. You will recall that this matter of the article appearing in the paper and the closing down of the Myers' plant were practically at the same time. No canvassing was done after the notice was received. Consequently, we have no expression from most of those who might have been affected.

X-Q. 106. You don't know, then, how they felt about it. Is that right?

A. We received no general expression from the trade.

X-Q. 107. Did you receive any expression from anybody except the Elkhart dealer who was handling your goods?

A. That is the only letter we have.

Cross-examination closed.

Adjourned until 9:00 Wednesday morning, August 9, 1911.

Wednesday, August 9, 1911.

Met pursuant to adjournment, parties present as before.

Redirect-examination by Mr. Lockwood.

R-D-Q. 108. In X-Q. 72 you stated that you didn't make any cars like that shown in the Myers patent, No. 942,735. Please state what styles of hay carriers you made and which was the nearest like that shown in said patent.

A. I may have been mistaken in my answer to the former question, not being familiar with the mechanical details of the construction, but the first 25 we made were practically the same as the patent, as far as I can tell. The balance of the cars were made with changes differing from the patent.

R-D-Q. 109. Did you personally engage in or superintend the construction of the hay carriers for the Hubert A. Myers Manufacturing Company?

A. No, sir.

R-D-Q. 110. Were you during all that time conducting your lumber business and the Hubert A. Myers Manufacturing Company was merely an investment which you looked after more or less but did not actually superintend the manufacturing?

A. Yes, sir.

R-D-Q. 111. Did the notice of infringement by the Goshen company or the publication about it in the Goshen newspapers cause Mr. Hartzler to refuse to furnish money or invest in the Hubert A. Myers Manufacturing Company, as you mentioned in answers to X-Q. 30 and X-Q. 31?

MR. CHAPPELL: Objected to as immaterial, further as incompetent as calling for a conclusion of the witness, and as not the best evidence as to what influenced Mr. Hartzler, this evidence being purely secondary, no foundation having been laid for it.

A. Mr. Hartzler stated that was the reason for it.

MR. CHAPPELL: Objected to as stating the conclusion of the witness, the evidence should show what Mr. Hartzler stated and even then it is objectionable as hearsay.

R-D-Q. 112. Do you know whether Mr. Hartzler had previous to that publication and notice expressed any intention of going into the Hubert A. Myers Manufacturing Company business in the manner you suggested in X-Q. 30 and X-Q. 31?

A. Yes, sir; he had so expressed himself to me.

R-D-Q. 113. State briefly, or in a general way, the extent of the lawn swing and other manufacturing of the Hubert A. Myers Manufacturing Company.

A. The business of the Hubert A. Myers Manufacturing Company was largely of swings, step ladders, and long ladders. Our hay carrier business was practically in its infancy. We had invested largely in patterns and experiments for our hay cars but had succeeded in getting but one year's business in the cars. The per cent of business of the hay cars would possibly not represent more than 15 or 20 per cent of the business done.

Redirect-examination closed.

Recross-examination by Mr. Chappell.

R-X-Q. 114. Did not Mr. Hartzler have some litigation as to his rights to conduct the business in which he was engaged?

A. I knew of none at that time.

R-X-Q. 115. Did you ever know of any?

A. He has had since that time, but with a business that has been launched since our negotiations terminated.

R-X-Q. 116. State whether or not an injunction was issued against him, if you know.

A. I have heard that there was.

R-X-Q. 117. How long after the service of notice by the Goshen Manufacturing Company was it that Mr. Hubert A. Myers sold his stock and who bought the stock?

A. He sold his stock probably 60 days after he received this notice. I bought the stock for the company.

R-X-Q. 118. He was the largest stockholder with the defendant company after that time, was he not?

A. He was.

R-X-Q. 119. He dictated the policy of the company, did he not?

A. He did largely.

R-X-Q. 120. Considering your answer to R-D-Q. 108, can you identify any of the exhibits as containing the structure of "the balance of the cars"?

A. Yes, sir.

R-X-Q. 121. Which is it? Please give the name of the exhibit.

A. That is the car there (witness pointing to "Complainant's Exhibit Defendant's Second Hay Carrier").

R-X-Q. 122. When the plant of the defendant company was closed down in September, 1909, to what extent was it necessary to cancel contracts for the delivery of its product?

A. There were no contracts canceled at that time. We simply closed down to make some necessary repairs and because business was practically over for the season.

R-X-Q. 123. And you had no contracts for the next season, is that right?

A. Yes, we had contracts at that time.

R-X-Q. 124. What became of them?

A. There were none of them filled except a part of the contract with Mr. Dietrich.

R-X-Q. 125. The rest were all canceled?

A. Yes, sir; but later in the season.

R-X-Q. 126. The hay carrier business was considered important by you from the first, was it not?

A. Yes, sir.

R-X-Q. 127. Do you know whether or not any change was made in the structure of the hay carrier made by the Goshen Manufacturing Company between the time you began negotiations with Mr. Myers and the time of the bringing of this suit? Please state your own knowledge, not what somebody told you.

A. I can't state positively if there was. I never investigated it.

Re-redirect-examination by Mr. Lockwood.

R-R-D-Q. 128. Has the Hubert A. Myers Manufacturing Company a factory or place of business, and if not, when did it cease to have such?

A. It has no office or place of business and has had none since the wood-working plant was sold in the spring of 1910.

Re-recross-examination by Mr. Chappell.

R-R-X-Q. 129. To whom was the wood-working plant sold?

A. To F. P. Bowman, of Coldwater, Ohio.

R-R-X-Q. 130. Was he in any way interested in the hay carrier part of the business?

A. No, sir.

R-R-X-Q. 131. Where are the patterns and special tools, if any, that were made use of in producing defendant's hay carrier that is complained of in this suit?

A. They were stored in my place of business together with the books and papers.

R-R-X-Q. 132. Have you ever offered any of the hay carriers for sale since?

A. No, sir.

DEPOSITION CLOSED.

DAVID A. PETERSON.

Wednesday, Aug. 9, 1911.

HENRY E. KINSEY, having been produced as a witness and being first duly sworn, testified as follows:

Q. 1. Please state your name, age, residence and occupation.

A. Henry E. Kinsey; age, 48 years; residence, Leesburg, Indiana; occupation, miller and grain buyer.

Q. 2. Please state whether or not you have ever been interested in the Hubert A. Myers Manufacturing Company, of Warsaw, Indiana.

A. Yes, sir.

Q. 3. When did you first become interested in that company?

A. Well, it was along in the fall of 1908, I think in September.

Q. 4. What was the nature of your interest when you first became interested, and what is it now?

A. My first investment was $1,000; then along in the spring of 1909 I put in about $2,100 more, so the total was 31 shares and $3,100. That is my present interest.

Q. 5. Did you participate personally in the work in the factory or doing the business of that company in any way?

A. No, sir.

Q. 6. You continued your milling business at Leesburg?

A. Yes, sir.

Q. 7. What was being manufactured when you first became interested in the company?

A. Well, lawn swings, ladders, hay carriers.

Q. 8. State whether or not the hay car business was one of the inducements for you to invest in that company.

A. It was.

Q. 9. Did you know to what extent and for what time that company made hay cars or hay carriers?

A. Well, there were a few made the first year, that was before I had taken any stock, but the next year, that was in 1909, we had gotten out material enough for about 500 cars.

Q. 10. Who managed the manufacturing and conducted the factory?

A. Mr. Myers.

Q. 11. State whether or not the company stopped manufacturing hay cars or hay carriers, and if so, when if you know?

A. Well, there was not any manufacturing after this bunch that I speak of that was gotten out in 1909.

Q. 12. Do you remember about when that was that the manufacturing of the hay cars stopped?

A. It was along about the time the season was over, probably the latter part of August or the first of September, as I remember. They had to keep up some repairs.

Q. 13. Do you remember anything about a notice of infringement of a patent being given the company by the Goshen Manufacturing Company?

A. Yes, sir; I read it in the newspaper.

Q. 14. Do you remember about when?

A. I should judge it was along the first of October, 1909.

Q. 15. In what newspaper did you read it?

A. In one of the Goshen papers; I don't remember which one it was.

Q. 16. State what effect, if any, that infringement notice had upon the business of the Hubert A. Myers Manufacturing Company and the further manufacture of hay carriers.

MR. CHAPPELL: Objected to as calling for a conclusion of the witness.

A. We didn't attempt to make any more after that.

Q. 17. Why not?

A. Well, we had been negotiating with another party about selling the patent, and after they had seen this notice they refused to have anything more to do with it.

Q. 18. Who was that party?

A. A Mr. Hartzler, I believe it was, from Goshen.

Q. 19. What patent do you mean he was talking about buying?

A. Our hay carrier patent.

Q. 20. Was he going to put any money into the manufacturing business, or going to buy it out also?

A. Now as to that I don't know, whether he intended to run the business at Warsaw or to move it to Goshen. I only talked to the man once.

Q. 21. Well, was it your understanding that he was going to buy the business of manufacturing hay carriers as well as the patent, or just the patent alone?

A. The entire business, patent and all.

Q. 22. After Hartzler refused to take up the business state what you and the other persons interested in the Hubert A. Myers Manufacturing Company decided to do about the further manufacture of hay carriers.

A. They decided not to make any more; they didn't, at least.

Q. 23. What did Hubert A. Myers decide to do, or what did he do?

A. He sold the interests that he had to the company.

Q. 24. Did he then cease to be interested in any way in the company?

A. Yes, sir.

Q. 25. About when was that, as near as you can recollect?

A. Oh, as near as I can recollect it was the latter part of November, or the first part of December, 1909.

Q. 26. Has your company ever manufactured any hay carriers since that time?

A. No, sir.

Q. 27. Has it gone out of business?

A. Yes, sir.

Q. 28. When did it go out of business?

A. The lawn swing and ladder business was sold to other parties, perhaps the first part of 1910.

Q. 29. Since the sale of the lawn swing business have the Hubert A. Myers Company had any factory or business or place of business?

A. No, sir; it has not.

Direct-examination closed.

Cross-examination by Mr. Chappell.

X-Q. 30. Did Mr. Hartzler say he thought the structure you were making was an infringement of the Goshen Manufacturing Company patent?

A. No, sir.

X-Q. 31. Did he say anything to you about the subject?

A. No, sir; nothing more than that he did not want to buy into any trouble.

X-Q. 32. How long have you know Hubert A. Myers?

A. Since 1908, about the time I went into this company. That was about the first time I made an acquaintance with him.

X-Q. 33. Who induced you to make the first investment into this company?

A. Mr. Peterson had talked the matter over with me, and also Mr. Lessig, president of the Lake City Bank at Warsaw, talked it over with me.

X-Q. 34. Why did they think it was a good investment, so far as they communicated with you? What did they say about it?

A. They thought the hay car was the best that would stand on the market in that line.

X-Q. 35. Did they discuss any other branch of the business?

A. That was the main thing, but in addition to that they talked lawn swings, and ladders, as a kind of side line to pay running expenses.

X-Q. 36. Did you interview Mr. Myers about the matter?

A. Certainly.

X-Q. 37. What did Mr. Myers say about it?

A. He said he had the best car there was on the market.

X-Q. 38. What did you know about this hay carrier business prior to the time you interviewed Mr. Myers?

A. Nothing, excepting what I heard from other manufacturers.

X-Q. 39. Who were the manufacturers that you heard about?

A. The principal one spoken of was the Goshen Manufacturing Company. There were others mentioned, but I can't recall them now. The Ney company was one of them.

X-Q. 40. Did Mr. Myers say anything about the work he had done in the hay carrier business?

A. Yes.

X-Q. 41. What did he say?

A. He claimed, I believe, that he had gotten up this car for the Goshen Manufacturing Company.

X-Q. 42. Did you look over the different cars or hay carriers so that you understood the construction?

A. Not in particular, only that this car was much simpler in construction than the other one, the Goshen car.

X-Q. 43. Did you make any investigations to see if the proposed car was an infringement on the Goshen car?

A. I did not.

X-Q. 44. Did anybody else make any such investigation that you know of?

A. No, except Mr. Myers had gotten up both of them and this one was entirely different from the Goshen car.

X-Q. 45. Mr. Myers was the principal stockholder and had charge of the plant, did he not?

A. Yes, sir.

X-Q. 46. It was because of Mr. Myers' skill in this line of business that you made the investment, was it not?

A. Partly so and on account of the car. It was a good one as far as I could see.

X-Q. 47. What did you know about other cars prior to examining this one of the defendant?

A. Nothing, only what I was told by the parties, Mr. Myers in particular.

X-Q. 48. Wherein did the car that Mr. Myers was making differ from the one made by the Goshen company, so far as he told you about it?

A. I couldn't tell you that. There was too much difference for me to point it out. I am not mechanic enough to tell you this.

X-Q. 49. After the organization of the Hubert A. Myers Manufacturing Company and prior to the bringing of this suit, what changes were made by the Goshen Manufacturing Company in the hay cars which it manufactured, so far as you know?

A. I don't know.

X-Q. 50. You don't know whether a change was made or not?

A. I don't know a thing about it.

X-Q. 51. Do you know whether any change has been made from that time to the present by the Goshen Mfg. Company?

A. I do not.

X-Q. 52. Did not Mr. Myers explain to you that the Goshen Manufacturing Company was doing a very successful business with the car that he had designed?

A. Yes, sir.

X-Q. 53. Why did the Hubert A. Myers Manufacturing Company change the construction of its car after it began manufacturing, so far as you know?

A. For the same reason that any other manufacturer would if they found some defect which they could better.

X-Q. 54. What was the defect that was being bettered by that change, so far as you know?

A. That I don't know. I didn't keep track of that part of it.

X-Q. 55. You don't understand how the different hay carriers operate?

A. I don't know much about them.

DEPOSITION CLOSED.

HENRY E. KINSEY.

ELLIOTT J. STODDARD, having been produced as a witness and being first duly sworn, testified as follows:

Examined by Mr. Lockwood.

Q. 1. Please state your name, age, residence and occupation.

A. Elliott J. Stoddard; age, 52 years; residence, Detroit, Michigan; occupation, expert in patent matters.

Q. 2. Please state what training and experience you have had which would tend to qualify you to testify as an expert in a suit for infringement of letters patent for inventions and particularly where the invention involved is a hoisting device or hay carrier.

A. I entered the Sheffield Scientific School of Yale College with the class of 1880 and took the mechanical engineering course. After studying two years I went to New York City and entered the Columbia Law School, from which I graduated in due course. I then went back to New Haven and finished my engineering studies, at the same time reading a text book on patent law and the leading cases in this branch of law. I afterwards made my living for a while as a draftsman, thus familiarizing myself with the details of machinery. I was afterwards employed as a mechanical engineer by a manufacturing concern, where I had oversight of all matters relating to engineering, and was specially engaged in experimental work, besides having facilities for carry-

ing on experimental work to illustrate my studies for which I had some time, which I tried to improve. I have been employed as a patent solicitor for about twenty years and have been frequently required to prepare opinions as to validity and infringements of patents, and have frequently been employed for some years as an expert in patent cases in the courts. I have carried on other experimental work, electrical and mechanical, and have frequently been consulted as an engineer. I have also had considerable experience as a teacher of engineering subjects.

I was a member of the Jury of Rewards on automobiles at the St. Louis World's Fair and expert on gas engines of the Jury on Marine Exhibits, and afterwards by courtesy chairman of that committee.

My employment has continually kept me in touch with the shops which includes familiarity with hoisting machinery.

MR. LOCKWOOD: Counsel for defendant company offers in evidence a certified copy of the file wrapper and contents of the Myers patent in suit, No. 876,991, granted Jan. 21, 1908, and the same is marked "Defendant's Exhibit A."

Q. 3. Please consider the patent in suit, No. 876,991, and particularly the subject-matter of claims 15, 16, 17, 18, 19, 24 and 25, and also the file wrapper and contents of said patent and state in a comparatively brief way what you find in the file wrapper contents of said patent bearing upon the subject-matter of said claims.

A. The apparatus of the patent in suit has been so well described by the complainant's expert in answer to Q. 3, extending from pages 4 to 8, that but little need be added. I notice, however, in this description some remarks apparently taken from the specification of the patent in suit indicating broadly the object sought, which taken by itself might indicate that such objects were new and the apparatus for procuring such objects novel. I do not think this would be a proper interpretation of the language.

(2) The device in suit is an apparatus for lifting and transporting loads. It is in effect a pulley or tackle. The load is lifted manually by pulling upon a rope, or by machinery or horse power, and apparatus is provided to hold the load suspended when the pull on the rope is *discontinued*. The alleged invention relates more particularly to the apparatus for sustaining the load. When the weight of the load is on the tackle, the load will be sus-

ined *automatically* at any position and the tackle may be moved long a track upon which it is suspended to transport the *load*, hich then may be released by a trip rope.

(3) When the *load* is not on the tackle the automatic means or sustaining the load or preventing the hoisting rope from runing backward, is out of gear, so that it does not operate and the oisting rope may run freely in either direction over the pulley.

(4) In the apparatus of the patent in suit, there is a pulley ; pivoted in a frame 2, and there is a hoisting rope 20 passing ver the pulley 5 downward under a pair of sheaves on pulley locks 21, then upward and its end is secured to a hook, which is art of "a movable member 17 which is supported on a spring which spring rests on a projection from the frame 2." There is a clutch shoe 9 having its ends pivotally secured to the outer ends of levers or radius rods 7 and 8. This arrangement constitutes a clutch. The shoe 9 or "clutch member," as it is called in the specification, presses against the rope by a movement inward and in the direction of the movement of the rope when the load is descending. This movement of the shoe or clutch member 9 is secured by turning the lever arms 7 and 8 downward about their stationary pivots. To make the movement of the clutch shoe or clutch member 9 positive, such member is provided with *pawl* 10, which, when the member is moved inward a short distance, is adapted to engage a tooth on the pulley 5, which when said pulley turns in a direction to allow the load to descend, positively forces the shoe or clutch member to turn the lever arms 7 and 8 about their stationary pivots and press said shoe against the rope upon the pulley, and thus positively clamp the parts.

(5) There is a spring 16, the lower end of which is secured to a stationary attachment, and the upper end is indirectly connected with the lever arm 7, so that the action of said spring is to normally turn the lever arm 7 about its stationary pivot and carry the shoe or clutch member 9 out of engagement with the rope and pulley, said shoe or clutch member also turning the lever arm 8 about its stationary pivot, so that the parts would have the positions indicated in full lines in Fig. 1 of the drawings of the patent in suit, and the pawl 10 would be out of line of the travel of the teeth 6 on the face of the pulley 5, so that said pulley would be free to move in either direction. The lever arm 7 is connected by a link 13 to a pivoted lever 14, which latter is adapted to be rocked about its stationary pivot 15 by the movement of the "movable member 17." The theory of the apparatus of the claims referred to by you, that is to say, 15 to 19 and 24 and 25 of the patent in

suit, is that the weight of the load brings a tension upon the hoisting rope 20, which draws the "movable member 17" downward against the action of its supporting spring 18, which movement of the movable member 17 rocks the lever 7 about its stationary pivot so as to move the brake shoe or "clutch member" 9 inward until the inner end of the pawl 10 engages a tooth 6 on pulley 5, when the further movement of said pulley in a direction to lower the load will carry the brake shoe or clutch member 9 inward against the rope and prevent further movement of the pulley or rope. This operation is described by complainant's expert on pages 7 and 8 of his testimony as follows:

> "The operation of the clutch 9 is dependent on the load itself, as will next appear. The lever 7, which is pivoted to the lower end of the clutch 9 at D, is also pivoted to the frame 2 at C, and extends to the right of this frame as shown. A link 13 is connected at its upper end to this lever 7 at B, and at its lower end to a lever 14 at A, the pivot of this lever 14 being at 15. The outer end of this lever 14 contacts with the lower face of a washer and nut at the upper end of a swivel bolt, or movable member 17, at the lower end of which one end of the hoisting rope 20 is attached through a swivel. This swivel bolt is embraced by a spring 18, and a sleeve 23, the latter limiting the downward movement of the lever 14. Thus, when the load comes on to the hoisting rope, the swivel bolt 17 descends against the spring 18 until it is stopped by the sleeve 23. At the same time the opposite end of the lever 14 rises, carries with it the link 13, which swings the lever 7 about its pivot C and causes the clutch 9 to descend to a point where a pawl 10 comes into the path of the lugs or teeth 6 at the periphery of the pulley 5. As previously explained, while the load is being hoisted, the pawl 10 slides over the teeth 6, and when the rope is slacked off, its downward movement causes the teeth 6 to engage with the pawl to force the clutch 9 into close contact with the rope which is jammed between it and the grooves of the pulley and held against further movement."

(6) It is true that Prof. Cooley, the expert for the complainant, afterwards changed his idea of the operation of the device of the patent in suit, but the above description accurately de-

scribes the mode of operation contemplated by claims 15 to 19, inclusive, and 24 and 25 of the patent in suit, to which you have referred.

(7) For instance, as to claims 15 and 16, it will be noted that these claims are the same except from claim 16 the clause "a trip for said clutch member" is omitted. In each of these claims occurs the expression:

> "a hoisting rope; a movable member to which said rope is attached, connected to said clutch whereby the same is actuated to bring the pawl thereof into engagement with said pulley."

(8) The parts referred to in this clause are as follows:

> (1) A hoisting rope (20);
> (2) a movable member (17), to which said rope (20) is attached connected to said clutch (9), whereby the same (9) is actuated to bring the pawl (10) thereof (9) into engagement with said pulley (5) (or the teeth 6 on the pulley).

(9) In the argument accompanying the amendment of May 24, 1907, in the application upon which the patent in suit was granted, the applicant says of a group of claims of which claims 15 and 16 were part in order to distinguish said claims from a patent to Batt and a patent to Bellair, cited against said claims, as follows:

> "Concerning the Batt and Bellair patents, the pawls are always in engagement with the pulley unless held out. In the applicant's device the pawls are only in engagement when the hoisting rope is under sufficient load to partially actuate the clutch."

(10) It was in reply to the argument of this amendment that these claims were allowed June 5, 1907, the convention of the Office practice being that if a claim is not criticized or if the contrary does not appear in an Office letter, the claim is allowed.

(11) Claim 17, as originally filed, reads as follows:

> "17. The combination with a frame of a pulley having teeth thereon; a movably supported clutch member; a pawl carried by said clutch; and means for actuating said

clutch to bring the pawl thereon into engagement with said pulley, for the purpose specified."

This was rejected on Roberts, 811,440; Batt, 395,113; Bellair, 95,971; Van Sickle, 7,681. After an argument by applicant this claim was again reected Dec. 5, 1906, upon the reference cited, and it was said: "In the case of claim 17, the Van Sickle reference is considered to meet it fully."

(12) By amendment of May 27 a claim was substituted for original claim 17, which differed therefrom in adding

"so that the rearward revolution of the pulley draws the clutch into engagement with the rope and clamps the same between the clutch and the pulley."

(13) June 5 this new claim 17 was rejected on Batt, Bellair and Van Sickle, of record, also Ferrall, 471,308, and Koorie, 809,815.

(14) This new claim 17 was amended July 27 by providing that the "pawl" should be "arranged on said clutch," and that the "means for actuating said clutch to bring the pawl thereon into engagement with said pulley" should be "adapted to be actuated by the load in the hoisting rope."

(15) Claim 17 as thus amended was rejected Aug. 9 on the previous references and Kincaid, 658,990; Moss, 496,693, the Examiner saying:

"Claim 17 is still considered to be met in Batt, Bellair and Van Sickle of record. All three patents contain each and every one of the parts claimed. To-wit, Bellair: frame *v*, pulley *a*, teeth *d*, movably supported clutch member *q*, pawl carried by clutch (at *p*) *o*, and means for actuating said chute to bring the pawl therein into engagement with said pulley, *the weight or gravity of the combined clutch and pawl and their lower surface or extremities*, the same being aided and actuated by the load acting through the hoisting rope by its rearward movement on the surface of the clutch to draw the clutch and pawl into closer and firmer braking contact. The same elements can be followed in Batt. Any rearward action of the ratchet wheel on the pawl in any of the above patents, draws the clutch in closer contact, if already in contact with the rope. The question of whether the pawl or rope

comes in contact first depends somewhat on the size and thickness of the hoisting rope. However, at the best, this claim is met in Roberts of record, Kincaid, 658,990, Oct. 2, 1900. (Auto Ck and Rel), and Moss, 496,693, May 2, 1893 (do), applicant having merely substituted a combined pawl and clutch such as is found in Batt, Bellair or Van Sickle above. See also Ferrall and Koorie of record."

Recess until 2 p. m.

Answer to Q. 3 resumed:

(16) To the last quotation I will add the following two lines from the same letter which relates to claims 18 and 19, the continuation of said quotation reads as follows:

"Claims 18 and 19 are met in Batt, Bellair and Farrell, of record."

"Claims 17, 18, 19 are rejected."

(17) In reply to this, the application was amended by canceling claims 17, 18 and 19 and substituting the claims which appeared in the patent.

(18) To understand the meaning of these actions by the Office and applicant, two or three of the simpler of the patents referred to may be examined. For instance, it seems to me that it will be entirely sufficient to consider the patents to C. F. Batt, No. 395,113, Dec. 25, 1888. "Hoisting Tackle," and Benjamin Bellair, No. 95,971, Oct. 19, 1869, with perhaps a reference to patent to Koorie 809,815, Jan. 9, 1906.

(19) In the class of apparatus to which the patent in suit relates, in considering their action, there are two things to be taken into consideration: One is that to lock the load in an elevated position one should prevent the rotation of the sheave or pulley in the block. For the first purpose a pawl is used which engages teeth on or integral with the pulley to prevent the backward rotation of the pulley. For the second purpose, that is, to prevent the slipping of the rope around the sheave or pulley. A brake is applied to the surface of the rope to press it against the surface of the pulley. Apparatus working in this way and accomplishing both of these purposes is shown in the patent in suit, and the patents to Batt, and Bellair and to Koorie. The brake applied to the rope is pivoted and its free end contacts the rope in

such a position that the movement of the rope to lower the weight would tend to clamp the brake or brake shoe against the rope with greater force. The pawl or dog engages the teeth integral with the pulley so that the action of said teeth on the pawl or dog tends to press the brake or brake shoe with greater force against the surface of the rope.

(20) The Batt device may be sufficiently understood by reference to Figs. 1 and 2, in which A represents the block, B a pulley pivoted in the block, and D a hoisting rope passing around the pulley B and having a load L suspended from the end *d'* of said hoisting rope D. There is a toothed wheel E concentric and ntegral with the pulley B. Above the pulley B and toothed wheel E is pivoted what is called a locking lever F, the lower end of which constitutes a dog or pawl adapted to engage the teeth of the wheel E (Fig. 2). This locking lever is integral with a brake or brake shoe G pivoted about the same axis as the locking lever F. There is a rope *i* (Fig. 2) by which the lever F and brake shoe G may be actuated to disengage said lever and brake from the wheel and pulley. It will be noticed that when the end *d* of the hoisting rope is drawn upon to raise the load L, the pulley B and wheel E will turn in a direction to disengage the brake or brake shoe G and the pulley F, but if the pull on the end *d* of the hoisting rope D is relaxed, when the pulley B and wheel E begin to turn under the influence of the load, if either the brake shoe G is engaged with the rope or pulley or the locking lever F is engaged with the teeth of the wheel E, in either case the pulley will be locked by both the lever and the brake. If the parts were so proportioned that the brake shoe G came into contact with the rope before the lower end of the locking lever engaged the teeth of the wheel E, then the action of the rope and pulley upon the brake or brake shoe G would be to turn the locking lever F, integral with said brake shoe, until it came into engagement with the teeth of the wheel E.

(21) On the other hand, if the lower end of the locking lever F engaged the teeth of the wheel E before the brake or brake shoe G came in contact with the surface of the hoisting rope above the pulley B, then the action of the teeth on said lever would be to turn the lever and consequently the brake shoe G about their common pivot until the brake shoe was clamped aginst the surface of the rope and pressed against the pulley so that the friction between the rope and pulley would be sufficient to prevent relative motion. The proportion of the parts as shown in Fig. 2 of the Batt patent is such that the lower end of the lever

F would engage the teeth of the wheel E before the brake or brake shoe G engaged the surface of the hoisting rope D above the pulley. Therefore the action of the weight or load L would be to turn the pulley B and wheel E so as to carry the brake or brake shoe G into engagement with the pulley.

(22) The Bellair patent was granted in 1869 and is somewhat inartificial and consequently difficult to understand without some explanation. This especially arises from the fact that the drawings are not fully lettered and such letters as are used are small and not very distinct. For instance, it takes a magnifying glass to distinguish the reference letter *n* which, in Fig. 4, indicates the engaging tooth of the locking lever, and this seems to be the only place in which this reference letter is used on the drawings. I have, therefore, placed letters on the drawings of the copy of the Bellair patent before me with lead pencil, making them large enough to be distinguishable, and I will have them put in in red ink, so that they may not be confused with the original lettering.

(23) A second reason why the Bellair patent is at first confusing, is that it has illustrated and described a form of apparatus which it does not claim, and has no necessary connection with the rest of the patent. This is illustrated in Fig. 1 of the drawing and referred to in lines 7 to 10 and 13 to 31 of the specification. To remove this source of confusion, I have drawn lines through Fig. 1 of the drawing and through the matter relating thereto in the specification.

(24) The Bellair device is very simple and the rest of the specification sufficiently clear. There is a series of pulleys or sheaves in a frame *v*. There is a toothed wheel *d* rigidly connected to the adjacent pulley *a*. Pivoted at *r* is a brake or brake shoe *q* adapted to engage at its lower end against a rope on the pulley *a* integral with the wheel *d*. Pivoted about the same point *r* as the brake shoe *q*, is an engaging lever *o* having a toothed end at its lower end and adapted to engage the teeth of the ratchet wheel *d*. The engaging lever *o* is pivoted at *p* (Fig. 2) to the brake shoe *q* in such a position that when the engaging lever is engaged with the teeth of the wheel *d* and the rope acts under the weight of the load to turn the pulley and wheel *d*, the pressure brought by the teeth of said wheel upon said lever shall act to force the brake or brake shoe *q* more firmly into engagement with the rope *s* upon the pulley *a* which is integral with the wheel *d*. The action of the Bellair device is precisely the same as that of Batt.

(25) Understanding the construction and operation of the Batt and Bellair patents, the ruling of the Office upon claims 17, 18 and 19 of the patent in suit may be understood, and I will refer particularly to the ruling from the Office letter of August 9, quoted on page 9 of my deposition. At this time the three claims, 17, 18 and 19 read as follows:

> "17. The combination with a frame, of a pulley having teeth thereon; a movably supported clutch member; a pawl carried by said clutch, and means for actuating said clutch to bring the pawl thereon into engagement with said pulley, said pawl being arranged on said clutch so that the rearward revolution of the pulley draws the clutch into engagement with the rope and clamps the same between the clutch and the pulley, said clutch being adapted to be actuated by the load on the hoisting rope.
>
> "18. The combination with a frame, of a pulley; a movably supported clutch member arranged to co-act with the pulley in clamping the rope; means for connecting said clutch member to said pulley arranged so that the rearward revolution of the pulley draws the clutch member into clamping engagement with the rope, said means being adapted to be actuated by the load on the hoisting rope; and a trip for said clutch.
>
> "19. The combination with a frame, of a pulley; a movably supported clutch member arranged to co-act with the pulley in clamping the rope; and means for connecting said clutch member to said pulley arranged so that the rearward revolution of the pulley draws the clutch member into clamping engagement with the rope, said means being adapted to be actuated by the load on the hoisting rope."

(26) In the ruling of the Office there are some clerical mistakes and apparent lack of punctuation, which require a little closer attention in order to get the Examiner's meaning. For instance, in line 6, as the quotation reads on preceding page 9, the word "chute" is used, which has no meaning in this connection, and the word "clutch" was probably intended, and in lines 8 and 9 the words "and their lower surface or extremities" seem to be out of place and not to be connected with the context. I will, therefore, reword the clause in which these two apparent

mistakes occur, also changing the punctuation somewhat, which will make it read as follows:

> "means for actuating said clutch to bring the pawl thereon into engagement with said pulley, the weight or gravity of the combined clutch and pawl (the same being aided and actuated by the load) acting through the hoisting rope (by its rearward movement) on the surface of the clutch to draw the clutch and pawl into closer and firmer braking contact."

(27) This language will be more clearly understood by referring to a clause in the Office letter of December 5, 1906, a letter antecedent to that from which the language being considered is quoted. The sentence from the letter of December 5, 1906, reads:

> "The weight of parts is often brought into claims as 'means' of performing an action."

(28) In all three of the claims 17, 18 and 19, as they were at this time, occurs the following language:

> "so that the rearward revolution of the pulley draws the clutch into engagement with the rope and clamps the same between the clutch and the pulley said clutch being adapted to be actuated by the load on the hoisting rope."

(29) This language was held not to distinguish the device of the patent in suit from the Batt and Bellair patents, because in each of said patents the pawl engaged the teeth of the wheel integral with the pulley and the rearward motion of the pulley and wheel would act on the engaging pawl or locking lever to force the brake or brake shoe into engagement with the rope and pulley, and the pulley would be actuated by the weight of the rope. The language referred to is descriptive of the Batt and Bellair device and it is also descriptive of the quite different device that is the feature of these claims in the patent in suit. It is true that in the patent in suit there is an equivalent apparatus acting in the same way as the Bellair and Batt apparatus referred to, but this latter apparatus would be anticipated by the Batt and Bellair patents and is not the apparatus referred to by the language of the claims. The Office, therefore, rejected these claims because

the language was not sufficiently definite and was a proper form of expression to describe two different and quite distinct mechanisms, one of which was anticipated by the Bellair and Batt patents.

(30) When the claims were so amended as to bring out the alleged fact that the clutch member was forced into position to be engaged by the pulley by the weight of the load, the claims were allowed. For instance, in claim 17 there is this language:

> "a movably supported clutch member; a pawl carried by said clutch member * * * and means for actuating said clutch member to bring the said pawl carried thereby into engagement with said pulley."

And in claim 18 occurs the following language:

> "means for connecting said clutch member to said pulley * * * the said means being adapted to be actuated by the hoisting rope when the load thereon is sufficient to counteract the means for holding said clutch member out of its engaging position."

(31) At the same time that claims 17, 18 and 19 were thus amended, that is to say, September 16, 1907, claims 24 and 25 were added, each of which contains matter similar to that which I have above quoted. For instance, in claim 25 occurs the following words:

> "a movably supported clutch member, a pulley engaging pawl carried by said clutch member * * * a hoisting rope, connections therefor to said clutch member whereby the same is actuated to bring said pawl connect-means into its pulley engaging position."

Adjourned until 2:00 p. m.

Q. 4. Please compare the structures of "Complainant's Exhibit No. 2 Defendant's First Hay Carrier" and "Complainant's Exhibit No. 3, Defendant's Second Hay Carrier" with the subject matter of claims 15, 16 and 17, 18, 19, 24 and 25 of the patent in suit, in view of the showing and description in the patent and the proceedings with reference thereto in the patent office as found in the file wrapper contents, which you considered in

your last answer. You can refer also to "Complainant's Exhibit No. 5 Sketch of Defendant's First Hay Carrier" and "Complainant's Exhibit No. 6 Sketch of Defendant's Second Hay Carrier."

A. The apparatus and the operation thereof upon which patentability was predicated, as I have pointed out in my last answer, is described from line 68 to 93, page 1 of the patent in suit, as follows:

> "In order that the clutch may be automatically actuated by the load, I provide a lever 14 which is pivoted at 15 and connected to the lever 7 by a suitable link 13. When this lever 14 is forced downwardly, it actuates the lever 7 throwing the pawl 10 into engaging position with the pulley so that on the rearward movement of the pulley, the clutch is drawn against the rope. The pulley itself serves as the other clamping member. Thus arranged, the greater the load the greater the clamping force of the clutch.
>
> "The hoisting rope, as 20, is connected to a movable member 17, preferably a swivel bolt which is arranged through the projection 3 of the pulley frame. A spring 18 is arranged on this bolt, the tension of the spring being sufficient to sustain the weight of the tackle so that the clutch 9 is not actuated when there is no load. As soon as the rope 20 is carrying a load, the bolt is drawn downwardly engaging the lever 14, and, through the connections described, actuates the clutch by throwing it downwardly until the pawl 10 therefor is in position to engage the pulley."

Defendant's First Hay Carrier.

(2) Turning to "Complainant's Exhibit No. 5" and the description thereof by complainant's expert, commencing with the last paragraph on page 8 and extending to the last paragraph on page 9, I note that it shows an apparatus for the same purpose generally as the apparatus of the patent in suit and having parts that are mechanically similar, although not identical. I note that in the construction of "Defendant's First Hay Carrier," there is a part corresponding to a pawl and there is a brake shoe or clutch member, and that the pawl and clutch member are pivoted

on the same pivot. This pivot and the clutch member slide in a slot in the casing for the purpose of engaging the pulley and rope. I notice that the engagement between the brake shoe or clutch member and the rope is on the side of the pulley opposite to that which the hoisting rope first contacts as it comes from the load. Thus, in this construction there is a better grip secured between the hoisting rope and the pulley surface than in the construction of the patent in suit.

(3) The operation of the apparatus of Defendant's First Carrier is different in an essential particular from that of the construction contemplated by the patent in suit and the claims thereof which you have referred to. As I have above pointed out, the construction contemplated by said claims in the patent in suit involved the operation which consisted in the weight of the load pulling down the movable piece 17 against the action of the spring 18, and thus forcing the brake shoe or clutch member downward into a position in which the pawl should be engaged, by the teeth on the pulley, so as to draw the brake shoe or clutch member into contact with the rope to clutch the same against the surface of the pulley. In Defendant's First Carrier there is a loose joint between the movable part 17 and the link 13. When the part 17 is drawn down, it is drawn away from the link 13 and does not act upon it. The pawl 7 and link 13 then fall by their own gravity, assisted by the spring 16 until the detent of the pawl 7 is engaged by a tooth or pin 6 on the pulley 5, when the reverse motion of said pulley will draw the clutch or brake shoe into clutching position. When the load is released, the part 17 actuated by the spring 18 rises, forcing the pawl 7 to its disengaged position. This operation is described by complainant's expert, commencing at the beginning of the last paragraph of page 9 to the end of said paragraph of page 10 of his testimony.

(4) The construction of defendant's second hay carrier is quite similar to that of the first except that a weight is substituted for the spring 18 and a mechanical device in part for the spring 16, and the tripping mechanism.

(5) In the construction of defendant's first carrier and also in the construction of defendant's second hay carrier, the engagement of the pawl is not occasioned by the action of the weight of the load, but results from the gravity of the parts, that is to say, the pawl 7 falls because of its weight or gravity into position to be engaged by the pins or teeth on the pulley. The Patent Office especially provided against granting a claim

broad enough to cover this action of the construction of defendant's first hay carrier and defendant's second hay carrier, and it was only after the claims 15 to 19, inclusive, of the patent in suit had been amended so as unmistakably to carry into them the provision that the load brings the clutch or brake shoe into position so that it shall be engaged by the teeth on the pulley, that such claims were allowed. All the claims contain this provision, as I have pointed out.

(6) The constructions of defendant's first hay carrier and defendant's second hay carrier, therefore, differ essentially from a patentable standpoint from the claims of the patent in suit referred to by you in that the pawl in such defendant's construction is carried into an engaging position by its weight, while in the construction of the patent in suit, it is carried into such an engaging position by the action of the weight of the load. In the examination of the application for the patent in suit it was considered that all claims presented that would be broad enough to cover the construction of defendant's first hay carrier and defendant's second hay carrier were tnticipated by the Batt and Bellair patents. The construction contemplated by the patent in suit and the claims thereof to which you have referred would be more positive and certain of action than in devices or constructions like that of defendant's said construction in that in the construction of the patent in suit the large force derived from the weight of the load would act to actuate the pawl and thus make its action more certain.

Q. 5. Please examine the deposition of Mortimer E. Cooley, complainant's expert, with reference to the matters inquired about in my last question to you, and point out any parts thereof with which you disagree, and give your reasons for your opinion. And also call attention to any matters within the scope of said question which were overlooked or not fully considered by Prof. Cooley.

A. It has seemed to me that it would be well to emphasize some of the points brought out by Prof. Cooley in view of the distinction between complainant's and defendant's devices which I have above pointed out, and I will do so as follows:

(2) Speaking of the construction of defendant's first hay carrier, and referring to the drawing "Complainant's Exhibit No. 5" on page 9 of his testimony, reads as follows:

> "A link 13 is connected at its upper end to the lever 7 at B, and at its lower to the swivel bolt 17 at A. This

link is U-shape, and connection is made to the bolt 17 by means of a hole in the bottom of the 'U' which drops over the upper end of the bolt."

(3) Of course, this is a loose construction. The swivel bolt 17 in descending under the action of the weight of the load would draw away from the link unless the weight of the link and connected parts caused it to follow. The pin as it permits the "U" to drop "over the upper end of the bolt" would draw through the aperture in the bottom of the "U" if the "U" did not follow it up. I have referred to the upper end of the bolt as a pin because it seems to be of less diameter in the drawing than the main shaft of the bolt. The engagement of the link with the bolt is by the upper end of the bolt passing through an aperture of the cross piece at the lower end of the U-shape link, as shown in Fig. 3 of "Complainant's Exhibit No. 5." In the following description Prof. Cooley consistently speaks of the downward motion of the lever 17 and link 13 as a "dropping" as if it were the weight of said parts that carried them down.

(4) On page 11 Prof. Cooley says:

"The defendant's link 13 is connected at its bottom end directly to the top of the swivel bolt at A, whereas in complainant's patent this link is connected to the end of a lever 14, which is interposed between the link and swivel bolt. Inasmuch as the object of the lever 14 is merely to secure a reversal of movement, its omission from the defendant's structure is not material, a reversal of movement not being necessary in the defendant's structure, as the parts are mounted."

(5) The difference of construction here pointed out however, brings in this essential difference of operation that while in the construction of defendant's hay carriers the swivel bolt is drawn away from the clutch actuating parts by the weight of the load, in the construction of the patent in suit the swivel bolt 17 is drawn against said connecting parts so as to positively actuate the clutch or brake shoe and force it into position to be engaged by the teeth or pins on the pulley so that a reverse movement of the pulley shall draw the brake shoe or clutch member into clutching position, or increase the pressure of such clutch member against the rope.

(6) Further along on page 11 of his testimony complainant's expert says:

> "Therefore, while the two structures differ in form and arrangement of parts, they are seen to operate in substantially the same way and to bring about the same result."

This is doubtless so in a large measure as engineering construction, but in the point upon which the claims in suit were granted, and from a patentable standpoint, they act substantially differently and bring about a result in a substantially different way. Indeed, the action is almost opposite.

(7) Upon page 12 of his testimony complainant's expert says:

> "The defendant's spring 16 is connected at one end to the frame of the carrier, and at the opposite end to a point on the lever 7 to the left of the pawl 10, whereas in the complainant's patent, one end is connected to the frame and the opposite end to the link 13, but this difference is seen not to be material, as the object of the spring is to restore the parts to normal position when the load is released, and it is accomplished in both devices in substantially the same way. The defendants use a separate trip lever, which acts directly on the link 13, whereas in the complainant's patent, this trip lever is an extension of the lever 7."

(8) On looking this over and comparing the exhibit drawing with the patent in suit, I am unable to agree with this statement to the full extent that the language quoted would at first seem to mean. In the construction of the patent in suit the spring 16 acts to disengage the brake shoe or clutching member 9, that is, to restore such clutching member to its disengaged position, carrying the pawl out of engaging position and above the line of travel of the teeth on the pulley. In the construction of defendant's first hay carrier, as shown in "Complainant's Exhibit No. 5," when the load is brought upon the hoisting rope the spring 16 acts to assist the weight of the pawl to draw the detent into the line of travel of the pins or teeth on the pulley, just the contrary action to that of the construction of the patent in suit. However, in the construction of defendant's first hay carrier, when the load is released, the spring 18 moves the part

17 upward forcing the part 7 into a position in which the detent is above the line of travel of the pins or teeth on the pulley, and it may be then that the spring 16 would act to draw the part 7 and the brake shoe or clutch member to the right as shown in said drawing, and thus in a sense restoring the parts to their normal position in the language of the expert for the complainant. But if there is any such action of the spring 16 in the device of the patent in suit, the analogy is remote. As far as the main and essential action of the spring 16 in the construction of the patent in suit is concerned, the spring 16 in defendant's first hay carrier is quite different. The action of said spring in defendant's device, which comes within the language quoted, is an action peculiar to such construction, and is due to the difference of construction of defendant's device from the device of the patent in suit.

Defendant's Second Hay Carrier.

(9) This is described by complainant's expert commencing with the paragraph just below the center of page 13 of his testimony and extending to the end of the paragraph at the top of page 15. It is noticed that as in the first hay carrier, the part 7 and link 13 drop by their weight, and it is noted that there is a provision whereby the link 13 is tilted about its pivot on the lever 14 so as to move the part 7 toward the right, as shown in the figure. This, as I have pointed out above, is the function of the spring 16 in defendant's first hay carrier, but it is an operation peculiar to the construction of defendant's hay carriers, and there is no analogous action of the spring 16 in the construction of the patent in suit.

(10) On page 15 it is said:

> "The spring 16 of the complainant's patent also finds its equivalent in the same weight, the object of this spring being to restore the parts to the normal position, this being accomplished in the defendant's structure by the weight."

I do not see the analogy. I have pointed out above how in one remote respect they may come within the same language.

(11) It is also said:

> "The effect that in the defendant's second hay carrier

the link 13 moves in a different direction is not material, being, as explained, in connection with defendant's first hay carrier, merely a reversal of movement."

For the reasons given in connection with the device of the first hay carrier, I can not agree with this statement. The difference is plainer and more obvious even in reference to the second hay carrier than in reference to the first.

(12) From an engineering point of view the resemblance of the parts of the construction of the patent in suit and defendants' hay carrier seem to me to be well stated by the complainant's expert. From a patentable point of view, they seem to me, as I have said, quite different and in a particular emphasized by the consideration of the office during the examination of the application.

(13) Upon page 24 of the testimony of the expert for the complainant "Complainant's Exhibit No. 2 Defendant's First Hay Carrier" is compared in the claims in suit, commencing at the paragraph just below the center of the page and extending to the end of said paragraph on page 25. This comparison is made by referring to "Complainant's Exhibit No. 5 Sketch of Defendant's First Hay Carrier." He says, among other things:

> "The third element, viz., a pawl carried by said clutch, or clutch member, is the pawl 10."

The analogy is not strict here. The pawl is not pivoted to the clutch member even using the breadth of equivalents that the expert for the complainant uses. The clutch and member 7 are pivoted upon one pivot. This is quite as near the Batt construction as the construction of the patent in suit, or as analogous to the construction of the patent in suit. In defendant's construction there is a tooth formed in a lever pivoted upon the same shaft as the brake shoe of clutch member in the Bellair and Batt constructions. In the construction of the patent in suit there is a pivoted dog which oscillates upon a pintle extending from the side of the clutch member or brake shoe. This affords a lighter construction and one that more easily yields to the action of the pins on the pulley when the pulley is drawn in a direction to elevate the load, the dog being in position to engage when a reverse movement of the pulley occurs.

(14) It is also said on the bottom of page 24:

"The fifth element, viz., a movable member to which said rope is attached, etc., appears in the swivel bolt 17, link 13, lever 7 and pawl 10."

(15) I am unable to say certainly what the et cetera of this quotation includes. If this is removed from the sentence so that it reads, "a movable member to which said rope is attached appears in the swivel bolt 17, link 13, lever 7 and pawl 10," I should not fully agree with this sttaement. The specification, line 81, page 1, speaks of:

"A movable member 17," which I have understood to be the meaning of the patent. This movable member is the bolt extending through a projection from the frame of the pulley at the bottom and right of said frame to a ring in the lower end of which the end of the hoisting rope is secured and which bolt is provided with a head and washer resting upon a spring 18 and adapted when the weight of the load acts upon the rope to depress the outer end of the lever 14, raising the inner end thereof together with the link 13 and outer end of lever 7, carrying the left hand of the lever 7 downward and bringing the clutch member 9 into such position that the lower end of the pawl 10 shall be engaged by the teeth on the side of the pulley 5. Turning to page 23b, I find element No. 5, or the fifth element, is thought of by the expert for the complainant under the various forms there specified which seem to include nine different forms of language, and the language quoted in these nine divisions does not seem to me applicable to the form of language just quoted from page 24, unless they are to be included under the general designation "etc." It does not seem proper to me to say that the hoisting rope is attached to the link 13, lever 7 or pawl 10 and in defendants' construction there is a loose joint between the swivel bolt 17 and link 13, so that there is no direct connection through said swivel bolt for the direct action of the rope on the link.

(16) On page 25 it is said:

"The seventh element, namely, means for holding said clutch member yielding out of its engaging position, lie in the springs 16 and 18, link 13 and lever 7."

I have above noted that it did not seem to me that the alleged equivalent of the spring 16 in defendants' construction was

means for holding said clutch member yieldingly out of its engaging position. Its action is just the contrary.

Complainant's Exhibit No. 3 Defendants' Second Hay Carrier.

(16a) On page 25 toward the bottom thereof it is said, referring to Complainant's Exhibit No. 6:"

> "Element No. 5, namely, a movable member to which said rope is attached, etc., lies in the weighted lever having a fulcrum 15, the point of attachment being 17, together with the link 13, lever 7 and pawl 10."

(17) I can not see the meaning of this sentence for the reasons I have specified in regard to the defendant's first hay carrier, and other reasons.

Adjourned until 9:00 tomorrow, Thursday morning, August 10, 1911.

Met pursuant to adjournment, parties present as before.

Q. 6. Please state briefly the differences in construction of the defendant's No. 2 hay carrier from the construction of that shown in the patent in suit, indicating the differences in function or operation of such differences in construction as you may note.

A. For convenience, I will refer to the drawing "Complainant's Exhibit No. 6 Sketch of Defendant's Second Hay Carrier," and to the drawing of the patent in suit. I will first call attention to the difference in the mode of action of the braking or clutching device. In the patent in suit there is a brake shoe or clutch member 9 pivoted to the outer ends of two links 7 and 8, which links are at their inner ends pivoted to a frame. These links swing about their stationary pivots to bring the brake shoe or clutch member 9 into or out of contact with the rope on the pulley 5. In the device of defendant's second hay carrier there is a brake shoe or clutch member which has a small oscillatory motion but which is adapted to move in a slot in a line approximately tangential to the pulley 5. When the clutch member is moved along said slot toward the pulley it comes against the rope and clutches the same against the pulley to prevent its slipping. The clutching action is largely due to the slight angle made by its path to the periphery of the wheel. The clutch thus moving in the slot, comes upon a part of the rope upon the other

side of the pulley to that from which the hoisting rope leaves the periphery of the pulley to pass down to the lifting apparatus for the load. Thus a considerable arc of contact is secured for the rope between the brake shoe or clutch member and the loaded strand where it leaves the pulley. This is a considerable advantage over the construction of the patent in suit in that greater friction is obtained with a larger arc of contact.

(2) I will next call attention to the difference in the construction, design and arrangement of the pawl. In the patent in suit there is a small latch or pawl 10 pivoted to the side of the brake shoe or clutch member 9 at 11. There is a pin 12 extending from the side of the brake shoe or clutch member to prevent the rotation of said latch or pawl about its pivot 11 in the direction of the hands of a clock, but permitting said pawl to turn in the other direction. When the radial face of this pawl is engaged by the teeth 6 on the pulley 5, and the pulley is moved in a direction to lower the load, that is to say, in a direction opposite to that of the hands of a clock, as shown in Fig. 1 of the drawings in the patent in suit, the brake shoe or clutch member 9 is thereby caused to swing downward, the levers 7 and 8 turning about their stationary pivots until the clutch member is brought against the rope and compresses the rope against the periphery of the pulley, as indicated by dotted lines in Fig. 1 of the drawing. This clutching action is stronger because the line of movement of the clutch member makes a rather small angle to the surface of the pulley where they come in contact. In defendant's second hay carrier the pawl is pivoted to the same pin about which the brake shoe or clutch member oscillates. When the tooth shown in the pawl 10 engages a pin 6 upon the side and near the periphery of the pulley 5, the reverse motion of said pulley acts to pull the clutch member along in the slot 8 by a pull almost in the direction of the slot. The pawl would turn a little about its pivot in bringing the brake shoe or clutch member into contact with the rope and pulley. This construction of defendant's second hay carrier has an advantage over that described with reference to the patent in suit in the following particulars: In the construction of the patent in suit the face of the pawl which extends nearly radially would be engaged by the tooth, and as the clutch member is actuated, the tooth would slide along the radial surface involving considerable friction. In the construction of defendant's second hay carrier this sliding action would be avoided.

(3) I will now call attention to the difference in the mode

of action as regards engaging the pawl with the teeth on the pulley and disengaging the same or causing the same to engage and disengage.

(4) In the patent in suit there is a spring 16 secured to a stationary fastening at its lower end and at its upper end attached to a link 13. The action of this spring is to draw downward upon the link 13 and through that upon the right hand end of the lever 7 so as to elevate the brake shoe or clutching member 9 attached to the lever at the other side of its stationary pivot to that at which the link 13 is attached. The lower end of the link 13 is pivoted to the left hand arm of a lever 14 pivoted to a stationary support at 15. The action of the spring 16 drawing down upon the link 13 is to depress the left-hand arm of the lever 14 and raise the right-hand arm of said lever. There is a bolt 17 in the specification called a "movable member," which may reciprocate vertically. This movable member has a nut at its upper end and a washer under the nut. There is a spring 18 supported at its lower end upon a projection from the pulley frame and at its upper end bearing against said washer to elevate the movable member 17. The left-hand end or arm of the lever 14 comes just under said washer. The end of the hoisting rope is attached to the lower end of said movable member. When the weight acts upon the hoisting rope, the movable member 17 is drawn down against the action of the spring 18, forcing down the right hand arm of the lever 14, rasing the left-hand arm of said lever, which carries with it, against the action of the spring 16, the lever 13 elevating the right-hand arm of the lever 7 and depressing the left-hand arm of said lever until the brake shoe or clutch member on said left-hand arm of the lever 7 is brought down so that the end of the pawl 10 engages the teeth on the pulley 5. This is the mode of causing the engagement of the clutching member of the construction in the patent in suit. When the load is released, the spring 18 forces the movable member 17 to the upper end of its stroke, permitting the spring 16 to draw down the link 13 and connecting parts so that the brake shoe or clutch member, the arm 7 and the lever 14 are restored to the position shown in full lines in Fig 1 of the drawing in suit.

(5) In the construction of defendant's second hay carrier, there is a lever which seems to be indicated by the reference number 14 in "Complainant's Exhibit No. 6." There is a weight indicated by the reference number 18 at the left-hand end of said lever. This lever is fulcrumed at 15. There is a slot opening upward in the right-hand arm of the lever 14 and upon the

bottom of this slot rests a pin apparently indicated by the reference letter A which pin extends laterally from a link 13, the upper end of which link has a slot passing over a laterally extending pin on the pawl 7 or 10. It will be noticed on looking at the drawing of "Complainant's Exhibit No. 6" that the pin A is free to move upward. The slot in the upper end of the link 13, which is indicated by the reference letter B, apparently, is of such length that when the weight 18 is at the lower end of its travel in the position shown in the drawing, the pin in the slot B will rest in the lower end of said slot, and the pawl 10 or 7 will be held by the link 13 above the line of travel of the teeth or pins 6 extending laterally from the pulley 5. The end of the hoisting rope 20 is secured to a link or toggle arrangement so as to act upon the right-hand arm of the lever 14, say, at the point indicated by the reference number 17 in the drawing of "Complainant's Exhibit No. 6." This is at a point at the right of Fig. 15. When there is no load upon the hoisting rope, the weight 18 brings the lever 14 into the position shown in the drawing, forcing up the link 13 and holding the pawl 10 or 7 in the position shown with its engaging tooth above the line of travel of the pins or teeth 6 on the pulley 5. When there is a load placed upon the hoisting rope, the lever 14 is caused to turn about its fulcrum 15 against the action of the weight, 18, thus lowering the right-hand arm of the lever 14, permitting the link 13 to drop by its weight, removing the support from the pawl 10 or 7 and permitting said pawl to fall by its weight into such a position that its tooth shall engage the teeth or pins 6 extending laterally from the pulley 5. The slot in the upper end of the link 13 apparently indicated by the reference letter B permits some lost motion between the link and the pawl, allowing some freedom of motion of the pawl. It is to be observed that there is no part analogous to the spring 16 in the device of defendant's second hay carrier. The lever 14 and the weight 18 thereon correspond in function to the lever 14, movable member 17 and spring 18 of the device of the patent in suit, but I do not see the analogy which seems to be indicated or implied by designating in the drawing of "Complainant's Exhibit No. 6" the weight by the reference numeral 16 as well as 18, unless it is that the said weight assists to lift the pawl out of engaging position, but to me this weight and lever seem to be analogous to the spring 18 of the patented device. Thus, if in the patented device, as seen in Fig. 1, the right-hand end of the lever 14 came above instead of below the washer 17 so that the upward movement of the movable member 17 would

actuate it, then the analogy between the two devices would be closer because in that case the spring 18 would act to raise the clutching member out of engaging position. It may be well to add for the sake of fullness that in the device of defendant's second hay carrier the link 12 is provided with a lug or offset *p* which engages against the frame of the pulley at *q* to turn the link 13 about the pin *a* and press the pawl 10 or 7 toward the right when the link 13 is raised by the weight 18 falling to the position shown in the drawing. This motion is incident to the peculiar construction of defendant's second hay carrier and has no strict analogy in the construction of the patent in suit, although in the latter when the brake shoe or clutch member 9 is raised it is necessarily moved longitudinally somewhat because of its pivoted connection, but in the construction of the patent in suit, it is the raising of the brake shoe or clutching member that disengages its surface from the rope, while in the device of defendant's second hay carrier, it is the sideway motion that disengages such surface, or the motion longitudinal of the pawl 10 or 7.

(6) Thus, the construction of defendant's second hay carrier differs from the construction of the patent in suit in this, that in the defendant's construction the brake shoe or clutching member is drawn against the rope and pulley directly instead of through the turning of levers as in the construction of the patent in suit, thus getting the benefit of a greater arc of contact of the rope and a different mode of action of the clutching apparatus. In said defendant's construction the pawl is pivoted about the same axis that the brake shoe or clutch member oscillate instead of, as in the patent in suit, being pivoted to the clutch member. In the defendant's construction a weight and lever are substituted for the spring 18 and a different mechanism is interposed between the movable member and the clutch member, resulting in a different mode of action in the important respect that in the construction of the patent in suit the weight of the load causes the engagement of the clutch and pins on the pulley while in the construction of defendant's device the weight of the load withdraws a support for the pawl and permits the pawl to fall by its own weight into engaging position, and no other provision than the weight of the parts is provided for such engagement and the apparatus is such that the weight of the load could not be used to cause such engagement. In the construction of the patent in suit there is a spring 16 provided to disengage the clutch member, while in defendant's construction,

the part which is apparently analogous to the spring 18 and movable member 17 is made to support the pawl out of engaging position and in the construction of defendant's hay carrier there is provided a special construction to move the clutch member along in its slot.

Q. 7. You have heretofore referred somewhat to the prior art in your consideration of the file wrapper contents in answer to Q. 3. I wish you would now consider the prior art as shown by any letters patent which you may have with reference to the subject- matter of said claims 15, 16, 17, 18, 19, 24 and 25, and the similarities between the construction shown in said prior patents and that described in said claims, and in the beginning of your answer you may refer to any statements in your answer to Q. 3 bearing upon such prior art.

A. In my answer to Q. 3 I have referred to and described U. S. letters patent 395,113, granted December 25, 1888, to Charles F. Batt, and U. S. Letters patent No. 95,971, granted Oct. 19, 1869, to Benjamin Bellair. These, as noted, are devices similar to the device of the patent in suit and having the same purpose in view. In the patent to Batt the pawl and brake shoe or clutching member are integral. In the patent to Bellair the pawl is pivoted to the side of the brake shoe or clutching member. Both devices work like the patent in suit and for the same purpose.

(2) I will refer by the way of more fully illustrating the previous art to the following United States patents:

No. 7,681, reissue of patent 148,009, originally dated February 24, 1874, reissued May 15, 1877, Hay Elevator;

No. 471,308, John Farrell, Hoisting Tackle, March 22, 1892.

No. 473,093, Bryant R. Sockman, August 19, 1892, Self Locking Pulley;

No. 349,538, Lorenzo D. Spragg, September 21, 1886, Hoisting Device.

No. 717,410, Johnson & Scarborough, December 30, 1902, Hoisting Apparatus.

No. 809,815, Hanna Koorie, January 9, 1906, Clothes-line Pulley;

No. 811,440, W. F. Roberts, January 30, 1906, Block.

(3) In the reissue patent, 7,681, there is a pulley P over which the hoisting rope passes, which pulley is pivoted in a depending arm C' extending downward from a lever C upon the other end of which is a wheel W arranged to run upon a horizontal elevated track A. The end of the arm C opposite to that

at which the wheel W is pivoted is pivoted to a lever T having a similar track wheel W′ upon its remote end. The lever arm T has a corrugated lower surface at its lower end, as indicated in Figs. 4 and 5, which corrugated surface comes above the rope on the upper side of the pulley. The weight of the load acting on the pivot of the pulley T acts to turn the arm C and lever T about their mutual pivot, pressing the corrugated lower end of the lever arm T against the rope to hold the load from slipping.

(4) In the Roberts patent No. 811,440, there is shown a part similar to the movable part 17 supported by its spring 18. Thus, in the Roberts patent, the securing hook is numbered 17, its shank 18 and spring 19. The action of the pull upon the parts 17 and 18 is to release a pawl, which is carried into engagement with ratchet teeth to prevent the movement of the pivot. This Roberts patent was cited in the examination of the application upon which the patent in suit was issued to show that it was not new to have the pull of the load cause the engagement of the pawl. The combination of the Roberts patent is, however, different from the patent in suit.

(5) Patent No. 471,308, to Farrell, shows a device for the same purpose as that of the patent in suit. There are two pawls D having detents on their lower parts adapted to engage pins or teeth a′ extending laterally from near the periphery of the pulley over which the hoisting rope passes. The engagement of these pawls by the pins or teeth acts to force a curved brake shoe B′ against the rope, forcing the rope against the periphery of the pulley and thus clamping or braking both the pulley and the rope in the same way as in the patent in suit.

(6) In patent No. 473,093 to Sockman, there is a sliding block used to force the rope against the pulley somewhat as in the defendant's hay carrier construction. There is a rocking frame which will be actuated by the hoisting rope when the pull is released to draw the locking block C into engagement. It will be sufficient to quote the part of the specification describing its operation, correcting a clerical error by substituting in one place the reference numeral 11 for the reference numeral 10 used by mistake:

> "Having thus fully described the different parts of my invention, I will explain the manner of its operation: One end of the hoisting rope is passed over the guide-roller 8, then around pulley E, then through a block I, then over pulley F, then back again through block I, and

is secured to the link 11. The block I carries a hook or other device (not shown) for supporting the load to be lifted. As soon as strain is applied to the hoisting-rope the head B is swung to the position shown in Fig. 1, thus moving the locking-block C out of contact with the block D. When it is desired to poise the load being lifted, the rope H is released and the load will immediately swing the head to the position shown in dotted lines in Fig. 2, thereby bringing the locking-block into contact with the inclined under face of the stop-block, which former bears upon the hoisting rope and locks the pulley E in an obvious manner. To release the rope the cord 10 is pulled down, thereby swinging the head back to the position shown in Fig. 1."

(7) In patent No. 349,538, to L. D. Spragg, there is shown a hoisting device having a brake lever K so pivoted to the frame of the pulley that its end may bear upon the rope and press the same against the pulley to prevent the reverse motion of said pulley and rope. The end of the hoisting rope is secured to a link IJ pivoted to the lever K so that the weight of the load shall act through said hoisting rope and link upon said lever to cause the engagement thereof with the rope and pulley and to make such engagement more secure.

(8) Patent No. 717,410, Johnson & Scarborough, shows a second form of apparatus for the purpose of the construction of the patent in suit, in which the brake is a sliding block indicated by the reference letter C, which block is actuated by a tilting frame actuated by the load, lines 81 to 94 of page 1 of the specification read as follows:

"The weight being attached and it being desired to hoist the same, power is applied to the outer end 1[a] of rope 1 until the weight is raised to the desired elevation. Said power being gradually released, the weight operates to tilt the frame B in the direction of said weight, which through the connection between said frames and the brake shoe carries said brake shoe toward the inclined surface *a* against which it impinges and by which it is forced downwardly to impinge tightly against the rope and lock it from movement, and thus will hold said weight at the desired elevation."

(9) Patent 809,815 shows a clothes line pulley. The sheave or wheel is integral with a ratchet wheel, and there is a brake shoe to press against the rope and integral with this a pawl to engage the teeth of the ratchet wheel. A reverse motion of the ratchet wheel would tend to press the brake shoe into firmer contact with the rope on the pulley.

(10) Thus, the previous state of the art shows the field pretty well worked. The idea of clamping the rope and pulley by a ratchet and brake shoe or clutch member is shown in a variety of devices and combinations, the operation being as in the patent in suit.

(11) It is also shown that the idea of a sliding block to clamp the rope has been used.

(12) Also, that the weight has been used to actuate the clutch—the weight of the load, and that the weight of the load has been used to release a pawl to cause it to engage a ratchet wheel, and a comparison of the previous patents reasoning from analogy seems to indicate a substantial change in the hay carriers of defendant and at least the average amount of an initiative and novelty.

Mr. Lockwood: I offer in evidence the marked copy of the patent to Bellair No. 95,971, dated October 16, 1869, and referred to by the witness in paragraphs 18 and 22, 23 and 24 of his answer Q. 3, and the same is marked "Defendant's Exhibit B."

I also offer in evidence the usual Patent Office printed copies of the following U. S. letters patent which are referred to by the witness, or in the file wrapper contents of the patent in suit:

No. 95,971, to Benjamin Bellair, dated October 16, 1869.

Re. No. 7,681, to Garrett Van Sickle, dated May 15, 1877.

No. 349,538, to Lorenzo D. Spragg, dated September 21, 1886.

No. 338,536 to Charles G. Major, dated March 23, 1886

No. 334,614, to Wentworth G. Ricker, dated January 19, 1886.

No. 395,113, to Charles F. Batt, dated December 25, 1888.

No. 461,316, to Jesse T. Burr, dated October 13, 1891.

No. 471,308, to John Farrell, dated March 22, 1892.

No. 473,093, to Bryant R. Sockman, dated April 19, 1892.

No. 714,710, to Johnson & Scarborough, dated December 30, 1902.

No. 729,968, to Frederick W. Smith, dated June 2, 1903.

No. 609,438, to Charles S. Kershaw, dated August 23, 1898.

No. 739,986, to Louis Chevenier, dated September 29, 1903.

No. 809,815, to Hanna Koorie, dated January 9, 1906, and applied for March 31, 1905.

No. 811,440, to William F. Roberts, dated January 30, 1906, and applied for May 5, 1905,

and said copies of U. S. letters patent are placed in one volume or batch and marked "Defendant Company's Exhibit C."

Direct examination closed.

Cross-Examination by Mr. Chappell.

X-Q. 8. I call your attention to "Complainant's Exhibit No. 6 Sketch of Defendant's Second Hay Carrier," and particularly to the part there labeled "Weight" and ask you to state the understanding of the operation of the weight and its various pivotal connections and what is accomplished thereby that is of utility in this device, and why you regard the same as of advantage, if you consider it to possess any advantage.

A. The weight is integral with the lever marked 14. This is pivoted upon a stationary support in the pulley casing at the point indicated by the arrow leading from the word "Fulcrum" adjacent to the inner end of the leading-in line from the reference figure 15. The link to which the end of the hoisting rope 20 is attached is secured to said lever at the right of said fulcrum at the point indicated by the inner end of the leading-in line from the reference number 17. Still further to the right of said fulcrum the link 13 is pivotally supported in a vertical slot in the lever integral with the weight, said slot opening upward so as to permit a vertical movement of said link in an upward direction, but to prevent a vertical movement in a down-

ward direction. I understand the office of this weight and lever is to carry the pawl 10 or 7 above the line of travel of the pins or teeth on the pulley, when there is no load on the hoisting rope.

Recess until 2:00 p. m.

Answer to X-Q. 8 continued.

(2) When there is a load upon the hoisting rope the weight of the load brings a force to tilt the lever 14 about its pivot 15, raising the weight and permitting the link 13 to fall, leaving the pawl 10 or 7 free to fall by gravity to engage the pin.

(3) As to the advantages of the weight, some designers prefer to use a weight to a spring, believing that the latter is liable not to be durable under repeated stresses.

X-Q. 9. Consider now "Complainant's Exhibit No. 5 Sketch of Defendant's First Hay Carrier," and U. S. letters patent No. 942,735, of December 7, 1909, to Hubert A. Myers, which is marked herein "Defendant's Exhibit Myers Second Hay Carrier," and consider particularly Figs. 1 and 6 of the said patent and state whether or not you find in the patent a spring corresponding to the spring 18 of the sketch and if there is a similarity in the operation of these devices.

A. I have not previously examined a copy of the patent that you refer to, but on referring to the drawings thereof, and especially Figs. 1 and 6, they seem to be like the drawing of "Complainant's Exhibit No. 5," and a spring F is shown, which seems to resemble the spring 18 of the exhibit, and which seems to me to have a similar action to the spring 18, and the devices, as far as I have examined, act in a similar manner.

X-Q. 10. Will you kindly compare the springs just referred to and their connections with the weight and its connections appearing in "Complainant's Exhibit No. 6 Defendant's Second Hay Carrier" and indicate similarities and differences of operation, so far as you understand the same?

A. They appear to be entirely similar in their operation.

X-Q. 11. With these devices, when the load is dropped, as by the disengagement of a hay fork, or the release of a hay sling, do not the springs or the weight, as the case may be, automatically release the rope clutch, so that the rope is free to play through the pulley in either direction?

A. Yes, sir, in connection with the rest of the apparatus. That is to say, they push up on the link or yoke 13 or M, which

raises the pawl or "locking dog" 10 or 7 or J out of line of travel of the pins.

X-Q. 12. In each of these structures referred to, there is a pawl co-operating with the rope clutch, which is thus acted upon when the same is automatically released. Is not that true?

A. I think so within your meaning. The part referred to as the pawl is called a locking dog in patent 942,735, and it resembles the pawl of the patent in some respects.

X-Q. 13. Will you now consider the patents of the prior art and any patents that have been offered in evidence and point out in any one of them structures containing a spring or weight comparable with the springs or weights above referred to, which operate in any way to automatically release the rope clutch and pawl or locking dog when the load is dropped as by releasing it from a hay fork or hay sling?

A. I do not recollect to have seen a weight or spring strictly analogous to the ones you speak of in their action. The weight of the load is connected directly or indirectly with the clutching mechanism in Ricker 334,614, and Spragg 349,538. In this latter the long arm of the lever K might act as a weight to relieve the clutch when the load was released, together with the weight of the rope M.

X-Q. 14. Please be a little more explicit in your answer relative to these patents referred to. Make the comparison a little more complete, if you will.

A. In reference to Spragg, the end of the hoisting rope is secured to the lever K at the right of its pivot. There is a long arm of said lever extending to the left from said pivot and there is a rope M depending from the outer end of said long lever arm. If the weight of the load was off the tackle, it might be that the weight of said long arm of the lever and rope would raise the inner end of said lever to the position shown in Fig. 2 of the Spragg patent where its touching face would be free of the rope and pulley.

(2) In the Ricker device the pulley F is pivoted in a lever or frame L, which latter is pivoted at *n* (Fig. 1). The end of the binding rope D is secured to a hook K which is connected by a clevise *g* to the shaft of the pulley F. Thus the weight of the load would tend to bind the pulley F against the pulley E, while when it was released the tendency of the hoisting rope D to straighten would tend to raise such pulley.

X-Q. 15. I do not see a weight or a spring in either of these structures comparable with the weight or spring inquired about.

Will you please indicate specifically the part you have in mind corresponding to such?

A. If you will turn to my last answer in reference to Spragg, I think you will see that I have answered your last question with reference to that. With reference to Ricker, I intended to point out that if it were comparable to the part you referred to, the corresponding force would come from the tendency of the rope D to straighten under the pulley F.

X-Q. 16. But there is no weight specified in the Spragg device at the point you indicate, but on the contrary, a hand rope M is provided for the manipulation of the lever K. Is not that so?

A. I agree with you except as to the use of the expression "on the contrary." The rope M might have been provided to release the clutch when the weight was upon the rope, that is, when the weight was on the hoisting rope, which is probable. When the load was reliever the weight of the rope M itself might be sufficient to carry the lever into the position indicated in Fig. 2 of the Spragg patent.

X-Q. 17. Please point to any statement in the Spragg patent indicating that it was contemplated in any way that this structure would release the rope automatically on disconnecting the load, as by dropping a load from a hay fork or from a hay sling.

A. As my last answer would imply, I do not think there is any such expression in the Spragg specification.

X-Q. 18. Please consider further the Ricker patent and point out the spring or weight definitely that is comparable with those in the defendant's structure and in the patent referred to indicating the operation thereof so far as you think it is comparable.

A. In reply to a former question I believe I said that if there were a part comparable to the spring or weight referred to in the Ricker patent it would be found in the tendency of the hoisting rope to straighten itself under the pulley F to raise said pulley (Fig. 4). You now ask me to point out in the Ricker patent a spring or weight comparable to the spring or weight to which you have previously referred, and I reply that so far as I am at present advised, I can find no such spring or weight.

X-Q. 19. Does this structure of Ricker operate in such a way that the release of the load as from a sling or fork automatically releases the rope clutch of the pulley?

A. The rope clutch of the pulley in the Ricker device comes

from pressing the pulley F toward the pulley E, thus pressing the rope against the periphery of the pulley E. The weight of the load acts to depress the pulley F and move it toward the pulley E, to press the rope against the pulley E and affect the rope clutch. A release of the load would release this pressure.

X-Q. 20. Would the rope then play freely back and forth? Kindly refer to the description of the patent and make your answer complete.

A. Referring to lines 45 ff. page 2 of the Ricker specification, I find the following:

> "The binding pulley F is provided with a peripheral groove for the draft-rope and is arranged to revolve freely on the stud *e* which passes through the clevis *g* and the binding frame *l* and connects these parts together. The binding frame L is pivoted on the bolt N passing through the side frames B B' and sustains the binding-pulley in position, so that it may swing up and down between the frame to and from the carrying sheave E, as indicated by the full and dotted lines in the figures. The clevis *g* is provided at its lower end with a hook K or other means for the attachment of the rope D thereto, so that a portion of the weight of the load is carried by the binding-pulley. The binding-pulley is narrower than the carrying-sheave E, so that its edges may enter between the flanges on the latter, and the rope be clamped or bound between them when the binding-pulley is in the lowest position."

(2) So far as the binding action between the pulleys E and F is concerned, inasmuch as the pulley F turns freely on the stud *e*, I think when the load is released that as far as this action is concerned, the rope runs freely.

X-Q. 21. Please point out any locking clutch with pawl or dog associated therewith in this Ricker structure that is comparable with the rope clutch and pawl or dog of the sketches of defendants' structure or the Myers patent referred to.

A. I find your form of question which first assumes that a certain part exists in a certain device and then asks me to point it out, somewhat embarrassing, but I will do as well as I can. Moreover, the word "comparable" here may be a matter of opinion, and I shall have to assume as well as I can what you intend thereby.

X-Q. 22. I wish, of course, that you would state your own views in this behalf. If I have misapprehended what your views are please do not hesitate to correct me.

A. Referring to my remark at the beginning of this line of cross-questioning, that I did not find in the previous art elements strictly comparable to those you mention, I will say—

Upon the pulley E (Fig. 1) of the Ricker device I note laterally extending teeth or pins *f f f* and there are dogs *o o'* which engage these teeth or pins to prevent a reverse motion of the pulley. Upon page 3, line 74, ff., of the specification I find the following:

> "Thus in case of an intentional or accidental release of the strain on the draft-rope, the binding-pulley F will settle down to the position shown by the full lines in Fig. 1, thereby binding the rope firmly against the carrying-sheave E and preventing the rope from slipping along around the said sheave. The sheave is prevented from turning backward by the dogs *o o'* engaging with the lugs *f f* on its edges; but the draft-rope might, under heavy strain, slip around it, were it not bound by the pressure against it of the pulley F, produced by that portion of the weight of the load which is sustained by the binding-pulley."

X-Q. 23. Will you please consider the structure of the patent in suit and the parts which support the clutch-shoe 9 and state why such parts support the shoe in the elevated position?

A. The spring 16 draws down upon the link 13, which draws down upon the right-hand arm of the lever 7, elevating the left-hand arm of said lever, carrying the lever arms 7 and 8 clock-wise around their stationary pivots. As these pivots are above the center of the pulley and vertically in line therewith, such motion carries the brake-shoe or clutch member 9 away from the periphery of the pulley and out of engaging position in relation to said pulley or the teeth thereon.

X-Q. 24. If this link 13 that you have referred to were disconnected, would not the clutch-shoe 9 drop into contact with the hoisting-rope by the force of gravity?

A. I think it would under all ordinary circumstances. Possibly the joints might become clogged and have so much friction that the weight of the shoe and parts would not be sufficient to carry the shoe and clutching member into engaging position.

X-Q. 25. Will you please compare the structure of the Myers patent in suit with "Complainant's Exhibit No. 6 Sketch of Defendants' Second Hay Carrier" and with "Complainant's Exhibit No. 5 Sketch of Defendants' First Hay Carrier" and the structure of the Myers patent No. 942,735, of Dec. 7, 1909, known herein as "Defendants' Exhibit Myers Second Hay Carrier", and consider the operation of the same in lifting a considerable amount of hay on a fork or hay-sling and state wherein these different structures differ and wherein they are similar in their action, so far as any automatic release of the hoisting rope is concerned, when such load is dropped from a fork or sling?

A. In the construction of the patent in suit when the load is dropped the spring 18 moves the movable member 17 to its upper position, as shown in Fig. 1 of the patent, so that the right-hand end of the lever 14 may rise. The spring 16 then draws down upon the link 13 rocking the lever 7 about its stationary pivot, disengaging the clutch member 9 and bringing the parts into the position shown in full lines in Fig. 1 of the patent in suit. In the two Exhibits 5 and 6 Defendant's First and Second Hay Carriers, and I believe in the Myers patent 942,735, and the construction shown therein, when the load is released, the weight or spring analogous to the spring 18 of the patent in suit acts to force the pawl or locking dog to its disengaged position.

(2) In the patent in suit the spring 18 moves the parts so as to permit the brake-shoe or clutch member to be moved to its disengaged position. In the other devices the part supposed to correspond to the spring 18 of the complainant's patent in suit acts to actuate the pawl or locking dog to its disengaged position.

X-Q. 26. Do not all of the devices operate automatically to release the draft-rope as soon as the load is dropped from the fork or sling?

A. Yes, sir.

X-Q. 27. Consider the patents of the prior art that have been offered in evidence and indicate which of them, in your judgment, the more nearly approaches the structure or structures pointed out in the claims here in controversy, which have been already many times recited.

A. No. 395,113, C. F. Batt, Dec. 25, 1888.
No. 95, 971, B. Bellair, Oct. 19, 1869.
Re. No. 7,681, VanSickle, May 15, 1877.
No. 471,308, Farrell, Mar. 22, 1892.

No. 809,815, Koorie, Jan. 9, 1906.

X-Q. 28. In which of these structures of these prior patents referred to is the draft or hoisting-rope automatically released when the load is dropped as from a hay fork or hay-sling?

A. In the Van Sickle patent the clamping of the rope depends upon the weight of the load and when the load is removed of course there will be no clamping practically.

X-Q. 29. How about the other structures to which you have referred?

A. In the other structures to which I referred I think the rope is not automatically released within the meaning of your question by detaching the load. Of course, in the Batt, Bellair, Farrell and Koorie devices, the removal of the load would relieve the tendency to turn the pulley in a reverse direction, which tendency acts to clamp the rope, but I do not take it that this is the meaning of your question.

X-Q. 30. I wish you would be more explicit relative to the Van Sickle structure, patent No. 7,681. How does the automatic release occur there when the load is dropped as from a fork or hay-sling?

A. The device being free and the weight upon the hoisting-rope the effect of this weight is to pull down upon the levers at their uniting pivot x and this brings a clamping action of the lower end of the lever T upon the rope. When the load is released its weight no longer acts to depress the pivot x and to bring the clamping action on the rope.

X-Q. 31. Why would the parts change position so that the pivot x would rise when the load was released? What is there that would return it?

A. There is no special provision for returning this pivot. The resiliency of the rope and parts would do it to some extent, but the action is simply that the load is removed, which load acted or tended to depress the pivot and produce the clamping effect. When it is removed it no longer produces the clamping effect.

X-Q. 32. Then why is this comparable with the action of the structure of the patent in suit, if it is comparable?

A. If I were seeking an analogy, I should reason in this way. In the patent in suit the weight tends to cause a reverse motion of the pulley, which produces a clamping effect. When the load is removed, the clamping effect is no longer produced in this way. This is somewhat analogous to the action of the Van Sickle device. Then in the patent in suit, when the load is engaged, the rope will be clamped to prevent the falling of the

weight, and the rope will not be clamped to prevent the falling of the weight or the part to which it was attached when the load is not engaged. This is also true in the Van Sickle device. The apparatus are not very analogous in my judgment.

X-Q. 33. Why in your judgment do the claims of the patent in suit insisted upon read upon the Van Sickle device?

A. I do not know.

X-Q. 34. Am I to understand that you do not think they read on this device.

A. I do not think the claims sued upon in the patent in suit read upon the Van Sickle device.

Cross-examination closed.

Re-direct examination by Mr. Lockwood:

R-D-Q. 35. Referring to X-Q. 11, which seems to refer to the preceding questions, there seems to be a statement to the effect that the springs 18 around the eye-bolt of the patent in suit and defendant's first device, and the weights in defendant's second device automatically release the rope clutch, that is, move it back to its disengaging position or normal position. Referring to defendant's second hay carrier, as illustrated in "Complainant's Exhibit No. 6", what part does the arm *p* and the wall of the casing at *q* perform by way of moving the clutch?

A. The parts you mention, the link 13, the lug *p* engaging the casing at *q* act to throw the clutch toward the right in connection with the weighted lever. This would throw the brake-shoe or clutch member away from the rope.

R-D-Q. 36. What part does the spring 16 in "Complainant's Exhibit No. 5 Sketch of Defendants' First Hay Carrier" perform by way of moving the clutch?

A. It performs the same function as just described with reference to the link 13 and lug *p* engaging the casing *q*. It throws the brake-shoe or clutch member toward the right.

R-D-Q. 37. Is it the spring 18 or the spring 16 in the patent in suit which automatically releases the clutch?

A. It is the spring 16.

R-D-Q. 38. Is it your understanding, then, that the spring 18 of the patent in suit automatically releases the clutch as indicated in X-Q. 11 and the answer thereto?

A. If that is indicated in the answer, it is not what I intended to indicate. The spring 18 or corresponding parts does

not in the construction of the patent in suit act to release the clutch, as I have pointed out in my cross-examination in other connections. It moves the part out of the way so that the spring 16 can act to move the clamping member out of its engaging position.

R-D-Q. 39. Is the spring 18 in the patent in suit the part which you understand to be referred to in some of the claims, such as claim 17, in the words "means for holding said clutch member yieldingly out of its engaging position"?

A. No, sir.

R-D-Q. 40. Do you know of any language in the claims of the patent in suit which are relied upon which refers to the spring 18 or makes it an element of the claim?

A. I find no language in the claims of the patent in suit referred to including the spring 18.

R-D-Q. 41. I show you two photographs, one marked "Defendant's No. 2 Device in Loaded Position" and the other "Defendant's No. 2 Device in Clutched Position" and ask you to please state whether or not they correctly show or illustrate the two positions of the defendant's No. 2 hay carrier.

A. They do.

MR. LOCKWOOD: Said photographs are offered in evidence and marked, "Defendant's Exhibits D and E" respectively.

DEPOSITION CLOSED.

ELLIOTT J. STODDARD.

IN THE UNITED STATES CIRCUIT COURT,

For the District of Indiana.

The Goshen Manufacturing Company,
vs.
The Hubert A. Myers Manufacturing Company and Hubert A. Myers.
No. 11,087.

NOTICE OF TAKING DEPOSITIONS.

Messrs. Chappell & Earl,
Chase Block,
Kalamazoo, Mich.

Gentlemen: Please take notice that beginning on Tuesday, August 8, 1911, at 10:00 a. m. the depositions in behalf of The Hubert A. Myers Manufacturing Company will be taken at the office of V. H. Lockwood, 415 Lemcke Building, Indianapolis, Indiana, before Miss Gertrude H. Boink, Notary Public, continuing from day to day until finished.

The depositions of Elliott J. Stoddard, Detroit, Mich., David A. Peterson and Charles J. Scott, both of Warsaw, Indiana, will be taken at this time, and probably others whose names are not now known.

You are invited to attend and cross-examine.

V. H. LOCKWOOD,
Solicitor for Defendant Company.

Received the above notice this 4th day of August, 1911.

CHAPPELL & EARL,
Counsel for Complainant.

IN THE UNITED STATES CIRCUIT COURT,

For the District of Indiana.

The Goshen Manufacturing Company,
vs.
The Hubert A. Myers Manufacturing Company and Hubert A. Myers. } No. 11,087.

CERTIFICATE OF NOTARY.

State of Indiana, }
County of Marion } ss.

This certifies that the foregoing depositions were taken before me, Gertrude H. Boink, a Notary Public in and for said county and state, at the office of V. H. Lockwood, 415 Lemcke Building, Indianapolis, Indiana, in pursuance of the notice hereto attached, beginning on Tuesday, August 8, 1911, at ten o'clock in the forenoon and continuing from day to day, and were concluded on Thursday, August 10, 1911; that at the taking of said depositions the complainant was represented by Mr. Fred L. Chappell and the defendant by Mr. V. H. Lockwood; that the depositions of David A. Peterson, Henry E. Kinsey and Elliott J. Stoddard were taken; that each witness was duly sworn by me before he testified; that interrogatories were propounded by counsel as set forth in the foregoing depositions orally and the same were at the time, together with the answers given thereto by the witnesses, written by me with a typewriter, as appears in the copy hereto attached, and a copy thereof was at the time furnished the attorneys for both parties; that after the questions and answers were written they were read by each witness and signed in my presence; and that the exhibits mentioned in the depositions were introduced, marked and signed by me as therein stated.

I further certify that I am not related to either party or to the attorneys therefor, nor in any manner interested in the same or in the outcome thereof.

Witness my hand and notarial seal at Indianapolis, Indiana, this 31st day of August, 1911.

GERTRUDE H. BOINK,
Notary Public.

(Seal)

Commission expires Feb. 19, 1913.

UNITED STATES DISTRICT COURT

For the District of Indiana.

In Equity No. 11,087.

The Goshen Mfg. Co., *Complainant,*
vs.
The Hubert A. Myers Mfg. Co., and Hubert A. Myers, *Defendant.*

Suit on Myers Patent No. 876,991

REBUTTAL PROOFS ON BEHALF OF COMPLAINANT.

Testimony on behalf of the Complainant taken pursuant to consent of counsel before M. Phina Woodruff, a Notary Public acting as Special Examiner, at the office of Chappell & Earl, in the City of Kalamazoo, Michigan, beginning April 3rd, 1912, at 10 o'clock.

Present:

Fred L. Chappell, on behalf of Complainant.
V. H. Lockwood, for the Defendant, the Hubert A. Myers Mfg. Co.

Testimony of Mortimer E. Cooley, on rebuttal.

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MORTIMER E. COOLEY, having been previously sworn on behalf of Complainant, testified on rebuttal in response to interrogatories by Mr. Chappell as follows:

Q. 1. Have you reviewed the testimony of Defendant's expert, and the prior art as evidenced by the patents offered in evidence in connection with the said expert testimony?

A. I have reviewed the deposition of Mr. Stoddard, Defendant's expert and have carefully considered the various patents of the prior art that have been offered in evidence.

Q. 2. Will you please consider the prior art as it appears in the patents offered in evidence and the assertions made rela

tive thereto, and state whether or not you find it necessary to modify the views expressed by you in the prima facie case, and in this connection, make such comparison of structures in the record as you find necessary, and supply any sketches or models that you find necessary to make clear any views you may express?

Mr. Lockwood: The question is objected to insofar as it calls for or relates to modifications of the deposition of the witness heretofore given, inasmuch as that would not be rebuttal testimony. The Complainant has already long ago made its prima facie case and it cannot now change its prima facie case, or make its prima facie case anew after Defendant's proofs have been taken.

Counsel for Complainant comments that it is not the desire of Complainant to in any way modify the prima facie case, and that it was not apprehended that the witness would desire so to do.

A. I have read the testimony of Defendant's expert with considerable care, and thus far have found no reason to change or modify my testimony in the prima facie case.

A word should perhaps be added to the explanation of the Defendant's expert in his comparison of the springs 16 in the patent in suit, and in the Defendant's first hay carrier as shown on the "Complainant's Exhibits, Nos. 4 and 5" respectively. The discussion of these springs will be found to begin in the paragraph number 8, typewritten page 64, of Mr. Stoddard's deposition. It is therein set forth that "in the 'Complainant's Exhibit No. 5,' when the load is brought upon the hoisting rope, the spring 16 acts to assist the weight of the pawl to draw the detent into the line of travel of the pins or teeth on the pulley, just the contrary action to that of the construction of the patent in suit." Later on in the same paragraph he states, "that when the load is released, the spring 18 moves the part 17 upward, forcing the part 7 into a position in which the detent is above the line of travel of pins or teeth on the pulley, and it may be then that the spring 16 would act to draw the part 7 and the brake shoe or clutch member to the right, as shown in said drawing, and thus in a sense restoring the parts to their normal position in the language of the expert for the Complainant.'

ing over the top of the pulley and having its lower edge corrugated at **v** to engage with the rope as a brake. The edges of the pulley are notched to form ratchet teeth **n**, with which pawls **b**, pivoted at **x**, engage.

The pulley supports C′ are extended to form a loop **c** through which the hoisting rope **f** passes. A detent L, hinged on the pulley axis **s** has attached at one end the ring R, the opposite end being adapted to engage a hook formed on the bottom of the inclined plates O, which are rigidly connected to the track at the point of loading. These plates O have inclined guides **h** on top with which the bar **i** attached to the lower end of the brake **t** is adapted to engage to release the brake.

In operation, the load on **f** is hoisted to engage the ring R, which being carried up, engages the loop **c** of the detent L and releases the track or car so that it can move on its track. As it moves to the left, the bar **i** slides off the inclines **h** and the brake **t** and detent **b**, under the weight of the load, engage at once with the rope and ratchet wheel, respectively, and hold the load in the elevated position while on its way to the unloading point. On returning to the loading point, the bar **i** slides up the inclines **h** and releases the brake and pawls so that the rope can be hauled down for another load.

From this description, it will be seen that aside from merely a brake and ratchet mechanism, there is nothing whatever to suggest the construction of the patent in suit. All the automatic functions are brought about by mechanisms of a different sort, differently arranged, and incapable of operation except by parts connected with the track structure. The mechanism of the patent in suit is entirely contained within the pulley structure itself.

Recess.

The patent to Ricker, No. 334,614, of January 19, 1886, is entitled a hay carrier. It was referred to by the Defendant's expert in answer to Q. 13, as an example in which "the weight of the load is connected directly or indirectly with the clutching mechanism * * *". As explained by Mr. Stoddard, a binding pulley F is mounted in a frame in such manner that when the load is hoisted, a part of the weight of the load causes the frame to descend, forcing the binding pulley and the hoisting rope passing under it down into close contact with the

hoisting pulley E, as best shown in Fig. 4. In view of the description of this patent given by Mr. Stoddard in his answers to Qs. 13 to 22, inclusive, it will scarcely be necessary to enlarge upon it here. It should be added, however, that the clamping effect obtained by forcing the pulley F down into contact with pulley E the rope being between the two pulleys, cannot be very great. The pulley F, as I understand it, is free to rotate and the resistance to slipping is that afforded by the contact of the rope with something less than half of the periphery of the hoisting pulley E, which is held stationary by the dogs o o'. As is well known in mechanics, the friction of a cord or rope around a stationary peg or pulley is dependent upon the arc of circumference embraced and also upon the force with which the free end of the rope is held. There would, of course, be no question of the amount of tension which might be exerted on the free end of this rope if the pulley F were stationary in its lower position, as the relation of the parts suggests a knee-joint construction; but further discussion is unnecessary, as I do not understand that Mr. Stoddard referred to this patent with any idea of its disclosing the mechanism of the patent in suit, or any part of it. I cannot, myself, see that it has any material bearing.

The patent to Spragg, No. 349,538 of Sept. 21, 1886, is entitled a hoisting device. Its construction is so clear from the drawings as to require but little description. The brake lies in one end L of the lever K, a trip cord M being attached to the opposite end of this lever. One end of the hoisting rope is attached at I to the link J, which in turn is connetced to the lever K between its fulcrum and brake end. Thus the weight of the load, or a part of it, depending on the number of falls used, is brought to bear on the brake to hold it against the part of the hoisting rope passing over the pulley B. The arrangement is such that the load is free to be hoisted, but arrested in its descent by the brake. It is explained in the specification, in the paragraph beginning with line 62, that when hoisting, the outer end of the lever is drawn down by the cord attached to it, allowing the hoisting rope to pass freely over the sheaves. Thus the brake is held out of engagement manually It is to be observed that the action of this brake is like that of a knee-joint, so that the tendency would be to crush

the rope. There is nothing whatever in Spragg, that I can discover, to even suggest a detail of the construction of the patent in suit, much less the mechanism therein disclosed.

The patent to Batt, No. 395,113, of Dec. 25th, 1888, is entitled hoisting tackle. This construction resembles, in some particulars, that of Bellair, No. 95,971. The pulley has a ratchet wheel E on its side with which a locking lever F engages. This lever is pivoted at p and has secured to it a cam-brake G adapted to bear on the turns of rope upon the pulley B, as shown in Fig. 1. Batt takes two turns of the rope around this pulley, thereby increasing the arc of contact and securing the necessary resistance against slipping, with only a moderate pressure of the brake G on the rope. The lever F is held constantly in contact with the ratchet wheel E by the spring S, except when manually pulled out of engagement by the cords H or i. The movement of the free end of the lever F is controlled by adjusting the length of the parts of the cord H.

In view of what has been said in connection with the patent to Bellair, very little more need be said on this patent. Aside from the ratchet mechanism and the brake, there are no parts resembling in any manner whatever the construction of the patent in suit, and even these parts have resemblance only in name. That is to say, there is nothing whatever in the patent to Batt to suggest the particular mechanism of the patent in suit, the reasons being substantially the same as those set forth in connection with the patent to Bellair.

The patent to Farrell, No. 471,308, of March 22nd, 1892, is entitled a hoisting tackle. Defendant's expert states that this patent "shows a device for the same purpose as that of the patent in suit." I do not understand that he means by this that it does more than simply support the load at a desired elevation, a brake action being brought about by detents engaging with pins near the periphery of the pulley, to force the brake against the rope. The detents are brought into the path of the pins by manual operation and not by any part of the weight of the load.

The principle of this construction will be understood by considering the lever F fulcrummed on the pin at the upper end of the link E, at the lower end of which is the brake shoe B'. The pawl D has a center of movement in the cross bolt

C and it, in turn, is pivoted to the lever F at a point to the right of its connection to the link E. This pawl is seen to be slotted at d′ to embrace a pin e in the bottom of the link E. The lever F has a counter-weight at one end, and an eye f for the attachment of the trip cord F′ at the opposite end. In normal position, the detent end of the pawl is disengaged or stands outside of the path of the pins on the pulley and the load can be hoisted without engagement with the detent. When it is desired to support the load at a given elevation, the lever F is pulled down by the trip cord, and with it both the brake and the detent descend to a point at which engagement takes place with the pins a′ on the pulley. The load then acts to force the brake onto the rope and to hold the load. To release the load, it has to be hoisted a certain distance to disengage the detent from the pins. A further downward movement of the lever F acts through the pin at the upper end of the link E as a fulcrum, the brake being on the rope, to raise the pawl out of the path of the pins, after which the descent of the load can be controlled by the brake.

From this description, it will be apparent that the Farrell patent discloses no mechanism at all comparable with that of the patent in suit. There is no provision for bringing the mechanism into action automatically. In short, it is quite a different mechanism.

The patent to Sockman, No. 473,093, of April 19, 1892, is for a self-locking pulley. This is referred to by Defendant's expert as having some resemblance to Defendant's construction, but he confines the resemblance merely to the sliding feature of the block, which acts as the brake. There is no other resemblance, and even this sliding block action is brought about in an entirely different way.

The arrangement of the parts of Sockman's self-locking pulley will be clear from the drawings without specific description. The essential feature is the rocking frame mounted on the pulley axis. The fixed end of the hoisting rope is attached to one end of this frame, and the hauling end passes over a pulley at the other end. The brake block C is connected to the semi-circular part of the frame, so as to slide under the wedge D when the frame rocks. The first thing which takes place when the load starts to lift is to throw the locking

mechanism into a position where it cannot engage. This is just the reverse of what takes place in the Defendant's structure, in which, when the load starts to lift, the locking mechanism is put into a position in which it can engage. In Sockman, when the effort ceases on the hauling part of the rope, the frame swings, due to the now unbalanced portion of the weight on the opposite end of the frame. Thus the brake is applied. In the Defendant's structure, when the effort ceases on the hauling part of the rope, the hoisting pulley starts backward, thus engaging the pawl after which the brake block is moved forward into contact with the rope. From this it would appear that the two structures, instead of resembling each other, are in some respects quite directly opposed to each other.

The patent to Johnson & Scharborough, No. 717,410 of Dec. 30th, 1902, is entitled a hoisting apparatus. This patent likewise makes use of a tilting frame, the upper part of which carries a brake block sliding under an inclined surface to force the block against the rope on the pulley. A pulley, B′ and B², is mounted at each end of the frame B. The fixed end of the rope is connected to the bolt which supports the middle part of the frame at the bottom of the housing, and this rope passes over the top of the two pulleys and under the block which is curved so as to carry the rope down between the pulleys at the top. In applying a hauling force to lift a load, the frame tilts to the right, carrying the brake block out of engagement with the inclined plane at its top, and when the hauling force ceases, the load acts to tilt the frame in the opposite direction, carrying the brake block in against the inclined plane and forcing it against the rope. The comments in connection with the Sockman patent are applicable to this patent and no further consideration is thought necessary.

The patent to Koorie, No. 809,815, of January 9th, 1906, is for a clothes line pulley. Like the patent to Bellair, No. 95,971, and to Batt, No. 395,113, Koorie has a ratchet wheel connected to the side of the pulley. A pawl l, fulcrummed at e is adapted to engage with this ratchet wheel, and there is rigidly fixed to this pawl a brake block m to engage the rope. In action these parts resemble the corresponding parts of the patent to Batt, but there does not appear to be any provision for lowering the load or slacking off on the line under a brake tension. Koorie's

device is more like a lock, in that having hauled a clothes line taut, it is clamped tight against slipping. Koorie discloses nothing suggesting the construction indicated by the patent in suit.

The patent to Roberts, No. 811,440, of Jan. 30th, 1906, is entitled "Block." As stated in the specification, it relates to blocks used in connection with tackle, particularly adapted to the tightening of conductors and guy-wires in line construction. It provides for an automatic lock upon the establishment of a definite tension in the wire to which it is applied, this being capable of variation, and which will give an indication of the existence of the lock. Defendant's expert has referred to it merely in connection with the movement under a load of the swivel bolt 17 against the action of the spring 18 of the patent in suit to show that such movement in itself is old. Nothing more, I judge, as he states, "The combination of the Roberts patent is, however, different from the patent in suit." An additional word, however, should be said. In the Complainant's patent, the spring is compressed at the very outset and remains compressed to its fullest extent until the load is released. Its compression has merely put the parts into a proper relation so that a locking can be effected on the slacking off of the hauling part of the rope and a rearward movement of the pulley, which carries the pins engaging with the pawl. In Roberts, the spring continues to elongate under the load as it is increased up to a pre-determined point at which a trigger will be pulled, shooting the pawl into engagement with the ratchet wheel and ringing a bell, at which the operation ceases, the functions having been completely performed. It is only by a far stretch of the imagination that any likeness whatever can be found between the spring action of Complainant's patent and the locking-block-indicating-device of the Roberts patent.

Summing up the prior art as discussed by Defendant's expert in the patents referred to by him, there is seen to be what I should regard a remarkable barrenness of idea or suggestion of the features peculiar to Complainant's patent. While there is, of course, clamping action of ropes by brake shoes, and also ratchet combinations, and while there is a sliding block, if you wish to call it such, and while there is a movement under load of a spring member, they are all so far apart and widely

separated in their use and function that to refer to them is only to emphasize what I am now disposed to consider combination in the patent in suit of marked individuality and novelty.

In conclusion, I have not been able to find the structures recited in the claims of the patent in suit in the structures of the prior art.

Adjourned to April 4th, 1912, at 9 o'clock.

April 4th, 1912.

Met pursuant to adjournment.

Present as before.

Direct examination closed.

Cross-examination by Mr. Lockwood.

XQ. 3. In your answer relative to the Bellair patent, did you consider the structure illustrated in Figs. 4 and 5?

A. No, not particularly. I do not recall that the Defendant's expert referred to either of these figures, except in connection with the indistinct notation or reference characters.

XQ. 4. What do you understand the arrangement and operation of the forms shown Figs. 4 and 5 of the Bellair patent to be?

A. The construction shown in Figs. 4 and 5 is clearly set forth in two paragraphs of the specification preceding the paragraph just ahead of the claim, as follows:

> "Instead of employing an auxiliary cord to unlock the brake and pawl, the rope itself may be made use of for the purpose. To this end I have devised the arrangement shown in Figure 4, which consists in causing the rope, which is on the side of the block opposite to that from which the load is supported, to pass through a hole, **u**, in the frame **v**, which latter is mounted on the axis of the pulleys, and is shown detached in Fig. 5.
>
> By drawing down the rope vertically, the frame **v** will turn upon its axis, and the cross bar **z**, at its upper end, will raise first the pawl, and then the brake so as to disengage both, and thus allow the ratchet, pulley, and rope to move freely."

It should be observed that such an arrangement, while it

might serve to take the place of the ordinary trip cord referred to in connection with Figs. 2 and 3 when the load is hoisted by hand, would scarcely be a convenient or even a practical arrangement when the hauling part of the rope leads down to a pulley on the ground or floor, thence to the whiffle-tree when a horse is used to haul the load, as is usually the case with a hay carrier. With the use of such a pulley at the floor or ground, the down-haul rope would lead in a straight line from the upper to the lower pulley, and unless slacked off, would not be available for use as a trip rope.

XQ. 5. In the last part of your answer about the Bellair patent, you state,—with reference to the device of the patent in suit as distinguishing it from the Bellair device:

> "Thus the rope is free of all wear due to sliding contact with the brake. It is only after the hoisting rope is slacked away so as to reverse the movement of the pulley that the pawl acts to move the brake shoe and cause it to come into contact with the rope, at which time the load is arrested."

Is that not also substantially true of the Bellair device, patricularly as shown in Figs. 4 and 5, in view of what you have just quoted from that patent, and the following quotation therefrom:

> "The latter (including the brake) is mounted and oscillates upon the axis r, which is placed in the upper part of the pulley block, and is so located that the brake, at the desired moment, can drop into the proper position to take hold of the rope passing over the pulley above which said brake is placed.
>
> Under this arrangement, when the workman * * * at any time looses his hold on the rope, the weight of the load tends to produce traction in the direction of the arrow 2. This, however, at once causes the brake q to compress the rope with great force, while the tooth n of the pawl will at once engage with the ratchet wheel, and thus instantly arrest the rotation of the pulley with

which said wheel is united, and upon which the brake is now pressing."?

A. No, I do not so understand it. The last part of the first paragraph quoted from the Bellair patent, viz,—

> "* * * can drop into the proper position to take hold of the rope passing over the pulley above which said brake is placed."

would seem to indicate that the brake block is free of the rope when not in use. This might be true in the construction shown in Figs. 4 and 5 where, if the hoisting part of the rope were carried down in a nearly vertical direction, it would swing the frame **v** so that the rod **z** would contact with the back of the brake holding it off of the rope while hoisting the load. It cannot, however, be true in the constructions shown in Figs. 2 and 3 ,except when the detent and brake are held up manually by means of the trip cord. Such holding up of the trip cord I have not considered would be done ordinarily in the common use of the tackle, nor, indeed, would it seem to me that it would at all times be convenient or practical, in the various uses to which the tackle is put, to have the down haul part of the rope shown in Fig. 4 lead in a vertical direction. This would be particularly true when the tackle is used as a hay carrier, in which the down haul part of the rope has usually to be led away at an angle to get it out of the way. It was with these considerations in mind that I made my answer in my direct testimony as quoted in the question.

XQ. 6. In this last event mentioned at the close of your last answer relative to the angle of the rope **s**, would not the frame **v** be modified in shape to suit the desired angle if one wished a particular angle for the pull of the rope. That is, instead of the side of the frame **v** being straight, the lower part would be curved upwardly to suit the desired position of the rope, would it not?

A. It could, of course, be curved upwardly as indicated in the question, in which case the down haul part of the rope could lead in a different direction than that shown. But that suggests special construction for special purposes. Moreover,

it does not seem to me that such a construction would be practical for the use of the Bellair tackle as a hay unloading device, owing to the fact that to release the brake, it would be necessary to reach, in some manner, the down haul part of the rope. This might be very inconvenient and possibly require a special attendant. For practical purposes, I should say that the construction shown in Figs. 2 and 3 would be better, being adapted to a greater variety of uses and not requiring parts of the device to be specially constructed to meet particular situations.

I judge from the specification that the construction shown in Fig. 3 is the preferred construction, as in referring to Figs. 4 and 5, it is stated that the rope itself **may** be made use of for the purpose of unlocking the brake and pawl.

XQ. 7. Is it not your understanding of the Bellair patent as it relates to the device in Fig. 4, that if the down haul portion of the rope **s** be relaxed or loosed, as the patentee says, the clutch **q** and pawl **o** will come into an engagement with their various parts.

A. No, I would not say that; for unless these parts are held out of engagement by the down haul part of the rope, they are always engaged. Indeed, I judge from the reading of the specification that they are intended to be always engaged, as the frame **v** is referred to as a means of unlocking the brake and pawl. It will be observed by referring to Figs. 4 and 5 that the part of the frame **v** below the pulley axis is considerably longer than the part above. The tendency, therefore, when the down haul part of the rope is slacked away or loosed, would be for this frame to swing towards a vertical position and thereby loosen the brake, but probably such tendency would not be effective owing to the engagement of the detent **n** with the ratchet teeth. Presumably considerable force would have to be applied to the down haul part of the rope to force the detent out of engagement with the ratchet teeth, if they are shaped as shown.

This is true, that when the down haul part of the rope is slacked or loosed, both the pawl and the brake would come into more intimate contact with their various parts; that is, the weight of the load would draw them down hard together, but as explained, these parts are always in contact except they be held out of contact; and if held out of contact, in the construc-

tion shown in Fig. 4, the down haul part of the rope must lead in a more nearly vertical direction, and in that case, if slackened away, I doubt very much whether the pawl and detent would ever come into action owing to the greater weight of the lower part of the frame v and the weight and stiffness of the rope itself. Of course, the pawl and detent could perhaps be made heavy enough to conteract this effect of the frame and rope, but in that case it would lead to greater wear, and in the general use of the device would, I should say, be a decided disadvantage.

Mr. Lockwood: The first paragraph is not responsive to the question and is objected to.

XQ. 8. Is it your understanding that in the Bellair device the pawl acts upon the brake to force it against the rope when the ratchet wheel moves backward under the influence of the load?

A. Yes. The pawl is pivoted to the brake block at the point **p**, so that the rearward effort of the hoisting pulley is transmitted through the pawl to the point **p**, causing it to ascend, the other end of the brake block descending, thus increasing the grip on the rope. The brake block itself is pivoted on the axis **r**. This answer, however, would not be complete without referring to the lines of forces involved tending to produce the action indicated. It will be observed, on referring to Figs. 2 and 4, that the detent **n** is nearly vertically above the center of the pulley. Any backward movement of the pulley and ratchet wheel would, therefore, tend to carry this detent over the center, and there would then be no lifting effect on the brake block at **p**. Indeed, there would be very little lifting effect with the detent in the position shown. This would become very important when the rope is worn or stretched so as to have a smaller diameter, thus requiring the brake to swing further down, carrying the point **p** further up. With such a smaller rope the locking device would not work at all.

XQ. 9. This last is equally true of Complainant's device, is it not? If it were made for an inch rope, it might not clamp a half-inch rope.

A. No, it is not equally true by any means; for in the Complainant's device, the clutch 9 keeps on descending until it contacts with the rope, whatever its size, up to or very near

the point where the brake block contacts with the rim of the pulley itself. If a half-inch rope would lie within or nearly within the groove of the pulley,—that is, not project much beyond it, it might not be clamped; but its range of action is very great.

Cross examination closed.

Deposition closed.

MORTIMER E. COOLEY.

Extended and formal notarial certificate and the signature of the witness in the presence of counsel and the notary is waived by counsel for both parties.

COMPLAINANTS' EXHIBIT No. 4.
Sketch of Complainants' Hay Carrier
From the Patent in Suit.

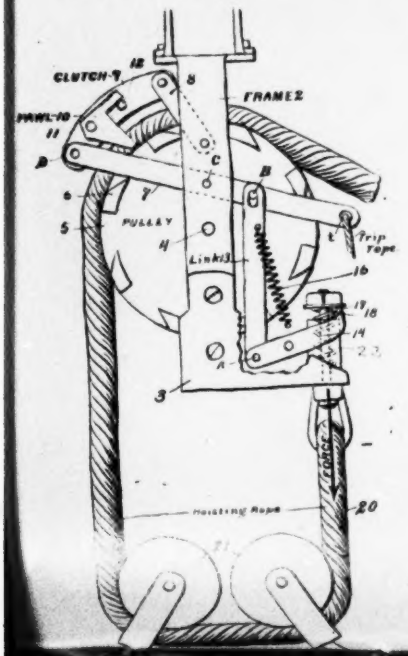


Fig. 1.

COMPLAINANTS' EXHIBIT No. 5.
Sketch of Defendants' First Hay Carrier.

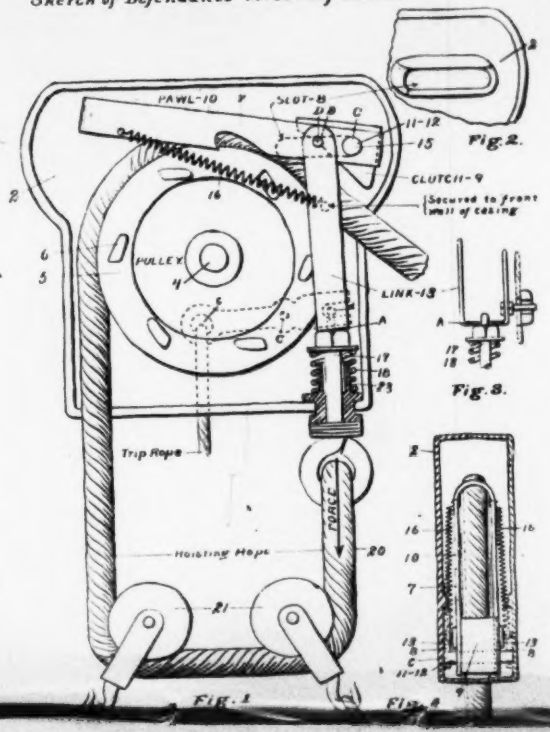


Fig. 2.

Fig. 3.

Fig. 4.

COMPLAINANTS' EXHIBIT No. 6.
Sketch of Defendants' Second Hay Carrier.

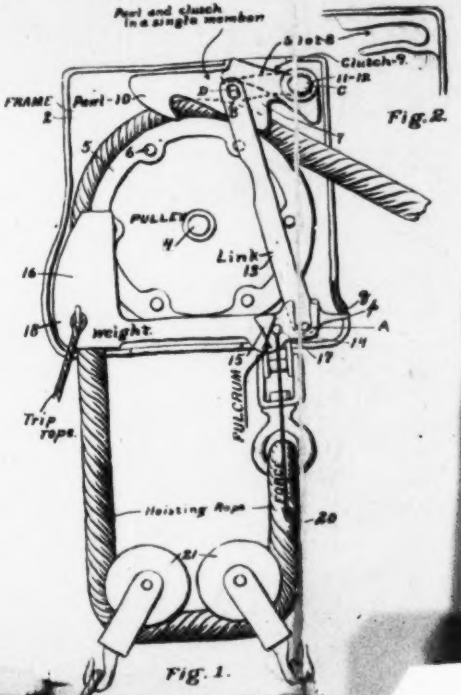
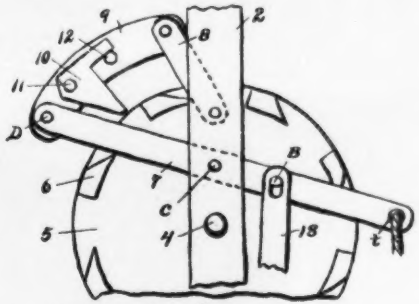


Fig. 2.

Fig. 1.

Slings 22

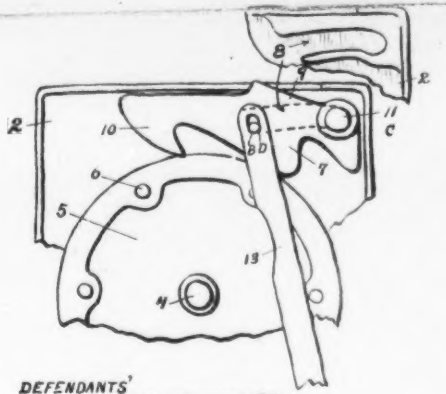
COMPLAINANTS' EXHIBIT No. 7.
Sketches of Complainants' Clutch and Paw



COMPLAINANTS' CLUTCH MECHANISM.

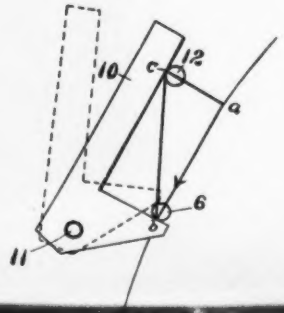
Fig. 1.

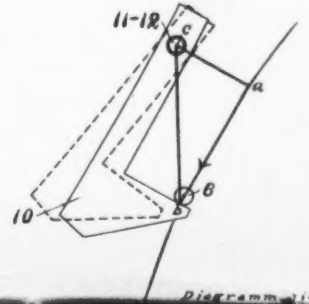
COMPLAINANTS' EXHIBIT No. 8.
Sketch of Defendants' Clutch and Pawl.



DEFENDANTS' CLUTCH MECHANISM.

Fig. 1.





Diagrammatic Sketch

COMPLT'S EXHIBIT 9.

Complain
Exhibi
Assign

Assignment.

Whereas, Hubert A. Myers, of the city of Bryan, county of Williams, state of Ohio, did obtain Letters Patent of the United States, for improvements in Hoisting Pulleys, which Letters Patent are numbered 876,991 and bear date the twenty-first day of January, 1908; and

Whereas, Allen P. Boyer is now the owner of the entire interest in the said patent; and

Whereas, The Goshen Manufacturing Company, of the city of Goshen, county of Elkhart, state of Indiana, is desirous of obtaining an interest in the same;

Now, Therefore, this indenture witnesseth, that for a valuable consideration to it in hand paid, the receipt of which is hereby acknowledged, I, the said Allen P. Boyer, have sold, assigned and transferred, and by these presents, do sell, assign and transfer unto the said The Goshen Manufacturing Company, all of my right, title and interest in and to the said invention as secured to me by the said Letters Patent, together with all rights and choses in action which have accrued to me, as well as those which may accrue for infringement thereof, and all rights to sue for and recover damages or profits for the same, the same to be held and enjoyed by the said The Goshen Manufacturing Company for its own use and behoof and for the use and behoof of its legal representatives to the full end of the term for which said Letters Patent are or may be granted as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

In testimony whereof, I have set my hand and seal this 28th day of September, A. D. 1910.

ALLEN P. BOYER

In Presence of
E. E. MUMMERT
JESSE C. RUNNEL

Defendants' Exhibit A,
Myers Original Blue Prints.

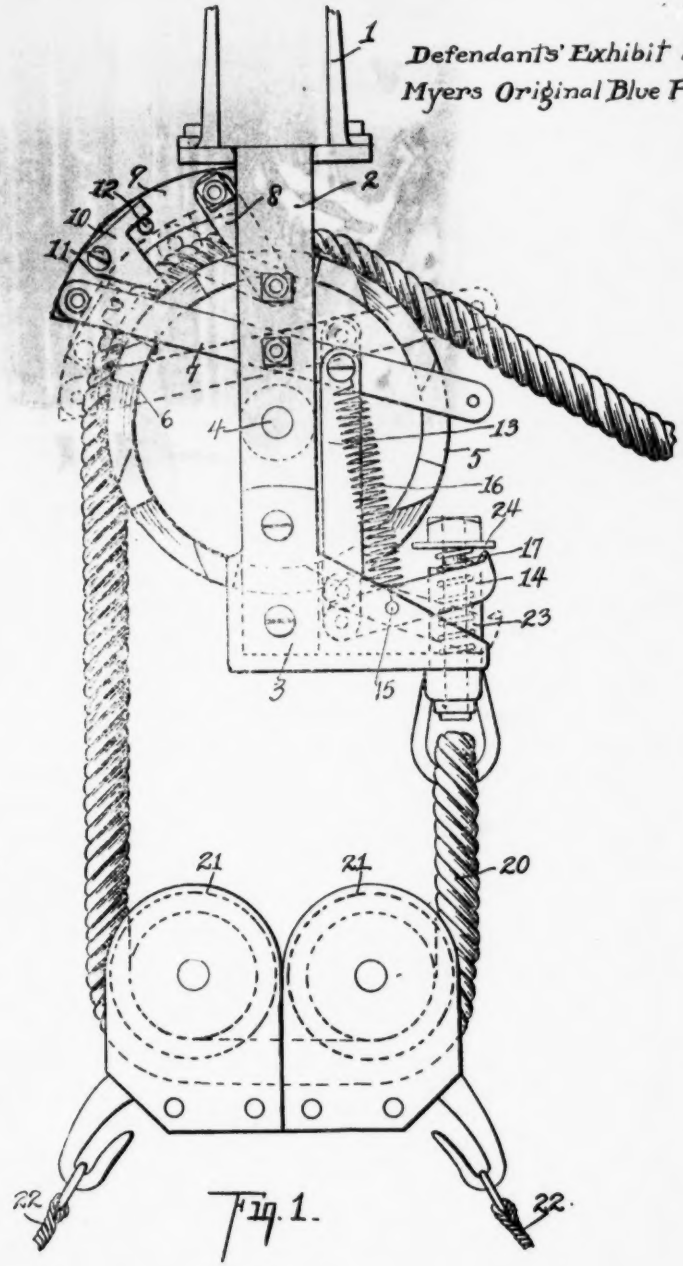
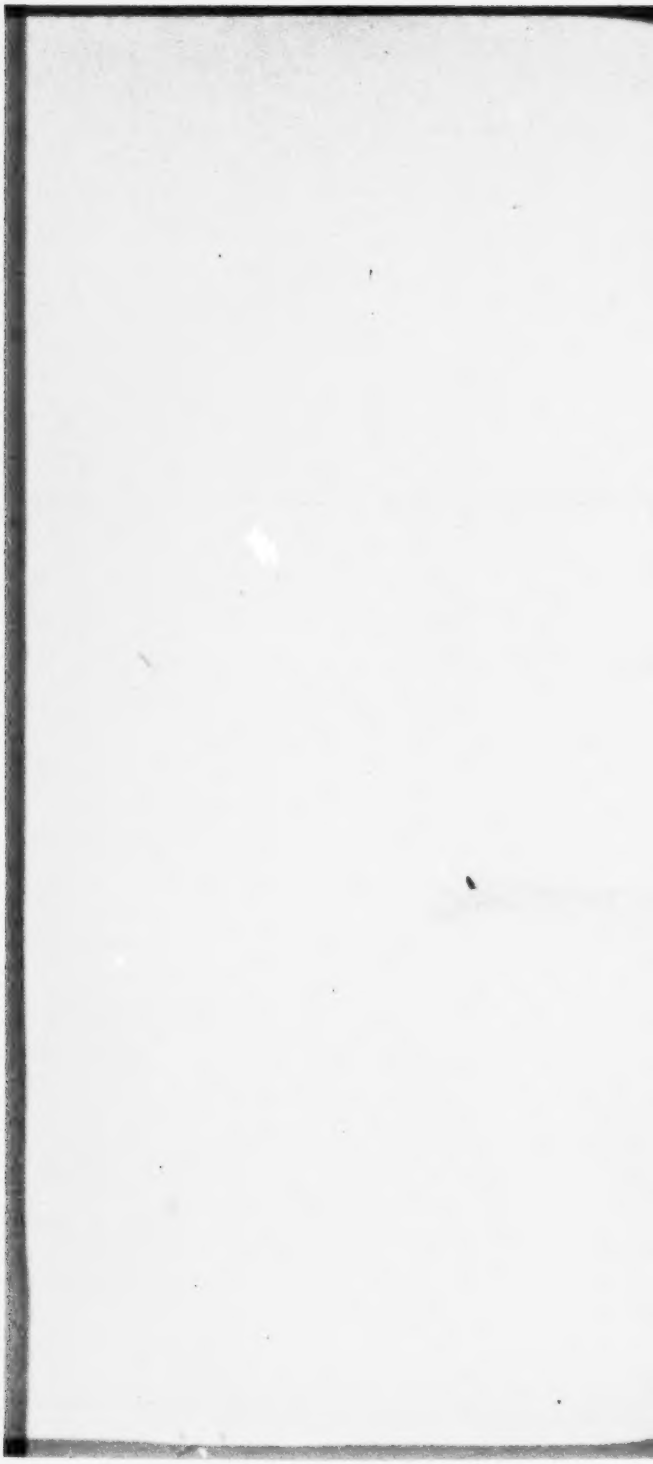


Fig. 1.



Defendants' Exhibit A,
Myers Original Blue Prints

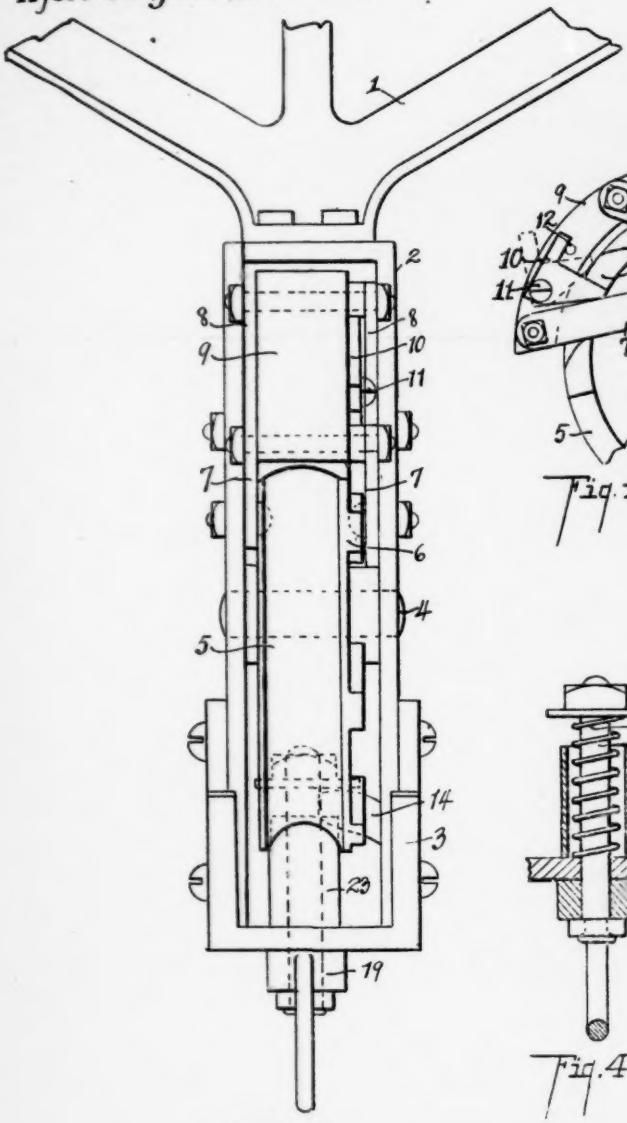


Fig. 2

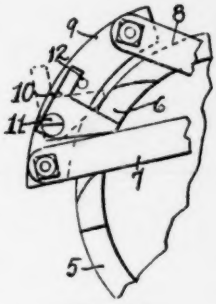


Fig. 3

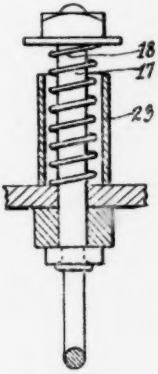
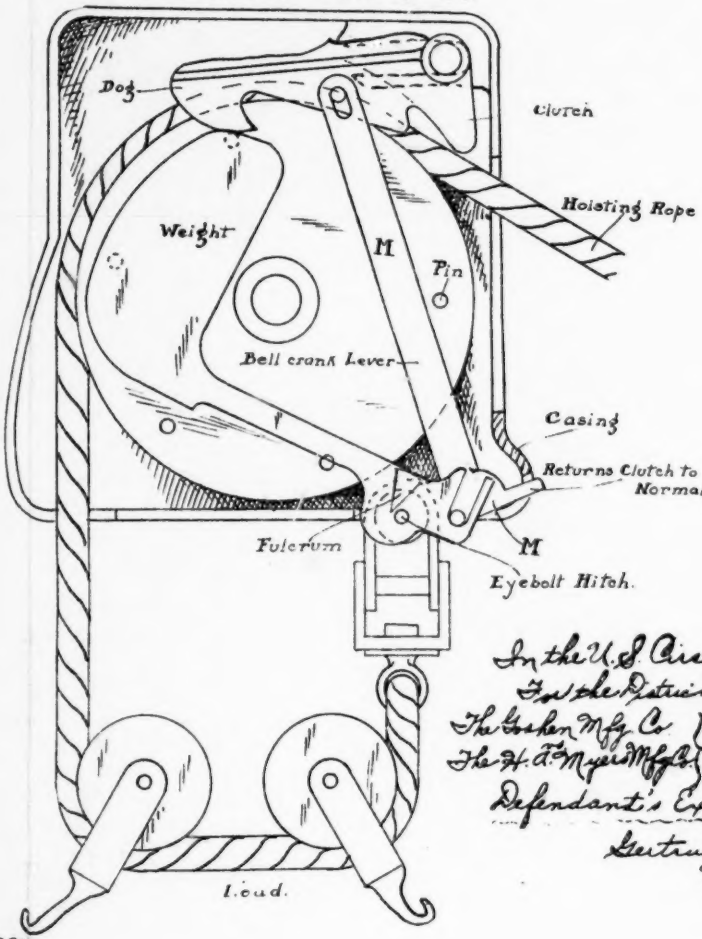


Fig. 4

DEFENDANT'S No 2 DEVICE.
IN LOADED CONDITION.

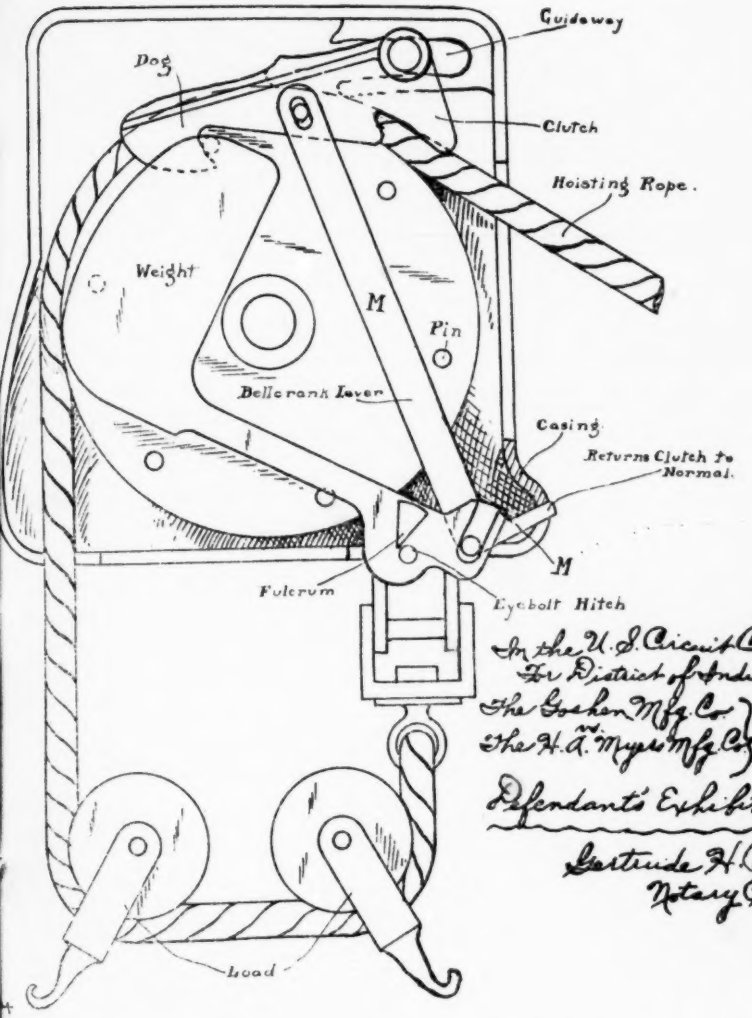


In the U.S. Circuit Court
For the District of Indiana
The Goshen Mfg Co } No 11,077
The H. & M. Myers Mfg Co
Defendant's Exhibit D
Gertrude H. [illegible]
Notary Public

26227

Defendants' Exhibit E. 75

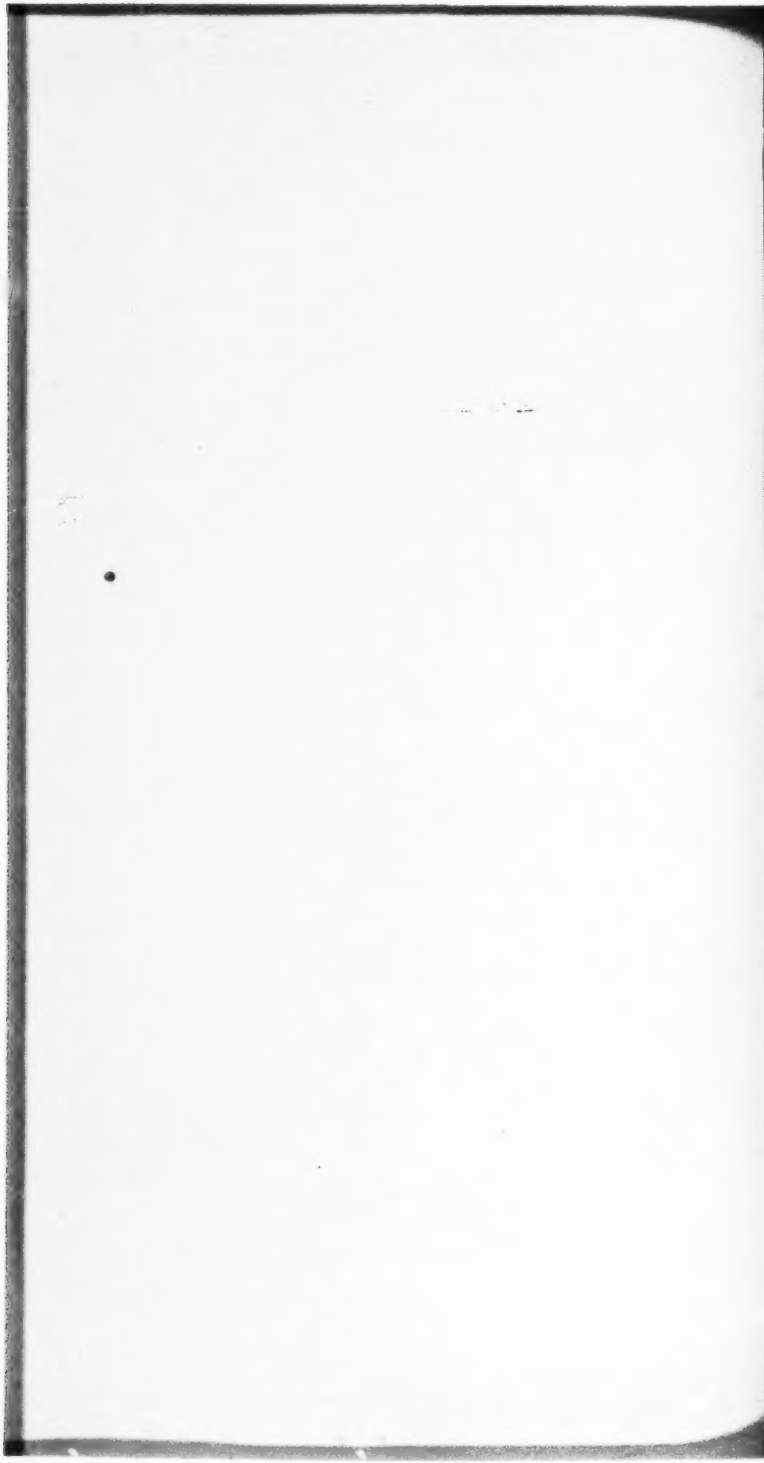
DEFENDANT'S No 2 DEVICE
in Clutched Position.



In the U. S. Circuit Court
For District of Indiana
The Goshen Mfg. Co.
The H. A. Myers Mfg. Co. } No. 11,087

Defendants Exhibit E.

Gertrude H. Boonk
Notary Public



Decree ... 10, 19...

IN THE DISTRICT COURT OF THE UNITED STATES

For the District of Indiana.

November Term, 1912. January 10, 1913.

Before the Honorable Albert B. Anderson, Judge.

The Goshen Manufacturing Company
vs.
The Hubert A. Myers Manufacturing Company and Hubert A. Myers.
} No. 11,087. Chancery.

Come now the parties by their respective solicitors, and this cause having been submitted to the court upon the pleadings, testimony and exhibits, and the court having heard the argument of counsel, and duly considered the same, and being sufficiently advised in the premises, finds that the equity of this cause is with the defendants.

It is therefore ordered, adjudged and decreed by the court that the bill of complaint herein be, and the same is hereby, dismissed for want of equity.

And it is further ordered, adjudged and decreed by the court that the complainant do pay to the defendants their costs herein expended, taxed at $.....

May Term, 1913. May 7, 1913.

Before the Honorable Albert B. Anderson, Judge.

Comes now the Complainant by Messrs. Chappell and Earl its solicitors and files its petition for appeal and assignment of Errors herein in the words and figures following, to-wit:

on for
eal.

UNITED STATES DISTRICT COURT,

For the District of Indiana.

Goshen Manufacturing Company, *Complainant,* *vs.* Hubert A. Myers Mfg. Co., and Hubert A. Myers, *Defendants.*	In Equity. (Old) No. 11,087.

PETITION FOR APPEAL.

Now comes the complainant and respectfully prays an appeal from the decision of this court in the above entitled cause entered on the 10th day of January, 1913, filing herewith its assignments of error, as required by the rules and practice of this court; and tendering herewith its appeal bond in the usual form in the sum of Two Hundred Fifty (250) Dollars, and prays approval of said bond and the suspension of the order relative to costs pending appeal.

Dated: 3rd day of May 1913.

CHAPPELL & EARL
Solicitors for Complainant.

Copy.

Assignme of erro

UNITED STATES DISTRICT COURT,

For the District of Indiana.

Goshen Manufacturing Company, *Complainant,*
vs.
Hubert A. Myers Mfg. Co., and Hubert A. Myers, *Defendants.*
} In Equity, (Old) No. 11,087.

ASSIGNMENTS OF ERROR.

And now, to-wit, on the 3rd day of May, 1913, comes the complainant, the Goshen Manufacturing Company, by Chappell & Earl, solicitors, and says that the decree in said cause is erroneous and inequitable in many particulars, to-wit:—

First: The court erred in not holding the patent in suit valid.

Second: The court erred in not holding the patent in suit infringed.

Third: The court erred in not holding that the defendants were estopped to dispute the validity of the patent in suit.

Fourth: The court erred in not granting a permanent injunction.

Fifth: The court erred in not ordering an accounting.

Sixth: The court erred in dismissing the bill of complaint for want of equity.

Seventh: The court erred in ordering the complainant to pay the defendants' taxa-costs.

Eighth: The court erred in not ordering the defendants to pay the complainant their taxable costs.

Ninth: The court erred in not ordering the injunction against the defendants in view of the manufacture of hay carriers in infringement of complainant's patent and their insistence on their right so to do.

(Signed) CHAPPELL & EARL
Solicitors for Complainant.

Order.

The said complainant having filed its petition for appeal from the decree entered in this cause on the 10th day of January, 1913, accompanied by its appeal bond in the penalty of Two Hundred and Fifty (250.00) dollars, with the Fidelity and

Deposit Company of Maryland as surety, and accompanied by its assignment of errors,

It is ordered that the appeal be and the same is hereby allowed.

And thereupon the complainant files its appeal bond herein in the sum of Two hundred and fifty dollars ($250.00) with the Fidelity and Deposit Company of Maryland as surety thereon, which bond is approved by the court, and is in the words and figures following, to-wit:

al bond.

Whereas, the above named complainant has prayed an appeal from the decree entered in said cause on the 10th day of January, 1913, from this court to the Circuit Court of Appeals for the Seventh Circuit, and as a condition of such appeal, has been required to give an appeal bond in the penalty of Two hundred and fifty (250) Dollars.

Now, therefore, know all men by these presents, that the Goshen Manufacturing Company, a corporation, of Goshen, Indiana, as principal, and Fidelity & Deposit Co. of Maryland, as surety, are held and firmly bound unto the above named defendants, the Hubert A. Myers Manufacturing Co. of Warsaw, Indiana, and Hubert A. Myers of Bryan, State of Ohio, in the sum of Two hundred and fifty (250) Dollars lawful money of the United States, to be paid to the said Hubert A. Myers Mnfg. Co., and Hubert A. Myers, their successors or assigns, for the full payment of which the said principal and surety hereby bind themselves, their heirs, representatives and successors, jointly and severally, firmly by these presents.

Sealed with our seals this 3d day of May, 1913.

The condition of this obligation is such that if the said complainant, appellant as aforesaid, shall prosecute its said appeal to effect, and shall pay all damage and costs that may be awarded against it in the matter of such appeal by the said Circuit Court of Appeals, or by the said Circuit Court, then this obligation to be void; otherwise to remain in full force.

GOSHEN MANUFACTURING COMPANY
By ALLEN P. BOYER,
President.

(Seal)

FIDELITY & DEPOSIT CO. OF MARYLAND
By WILLIAM E. BARTON,
Attorney in Fact.

Order of 1, 1913.

And afterwards, to-wit, at the May Term of said Court, on the 1st day of July, 1913, before the Honorable Albert B. Anderson, Judge of said Court, the following further proceedings in the above entitled cause were had, to-wit:

On motion of the complainant, defendant consenting, it is hereby ordered that the time for filing transcript be and is hereby extended sixty (60) days.

Praecipe record.

UNITED STATES DISTRICT COURT,

District of Indiana.

The Goshen Manufacturing Company, *Complainant,* v. The Hubert A. Myers Manufacturing Company and Hubert A. Myers, *Defendants.* } In Equity, No. 11,087.

PRAECIPE.

To Noble C. Butler,
Clerk.

Dear Sir:

Please prepare Transcript on Appeal consisting of Bill of Complaint and Answer; prima facie and rebuttal depositions of Mortimer E. Cooley, Allen P. Boyer and Hubert A. Myers on behalf of Complainant; and depositions of David A. Peterson, Henry E. Kinsey, Elliott J. Stoddard, on behalf of Defendants,—all as contained in the printed records of Complainant and Defendants, together with the Decree, Assignment of Errors, and Order Allowing Appeal, and the following exhibits,—

Complainant's Exhibit No. 1, Patent in suit,

Complainant's Exhibit No. 2, Defendant's first hay carriers,

Complainant's Exhibit No. 3, Defendant's Second hay carrier,

Praecipe for Record.

Complainant's Exhibit No. 4, sketch of Complainant's hay carrier from patent in suit,

Complainant's Exhibit No. 5, sketch of Defendants' first hay carrier,

Complainant's Exhibit No. 6, sketch of Defendants' second hay carrier,

Complainant's Exhibit No. 10, Myers' original device,

Complainant's Exhibit No. 7, sketches of Complainant's clutch and pawl,

Complainant's Exhibit No. 8, sketches of Defendant's clutch and pawl,

Complainant's Exhibit No. 9, assignments of patent in suit,

Defendant' Exhibit A,

Defendants' Exhibit D,

Defendants' Exhibit E,

Patent Exhibits as follows:

No. 7,681, reissued May 15, 1877, to G. Van Sickle,
No. 95,971, patented Oct. 19, 1869 to B. Ballair,
No. 334,614, patented Jan. 19, 1886 to W. G. Ricker,
No. 338,536, patented Mar. 3, 1886 to C. G. Major,
No. 349,538, patented Sept. 21, 1886 to L. D. Spragg,
No. 395,113, patented Dec. 25, 1888 to C. F. Batt,
No. 461,316, patented Oct 13, 1891 to J. T. Burr,
No. 471,308, patented Mar. 22, 1892 to J. Farrell,
No. 473,093, patented Apr. 19, 1892 to B. R. Sockman,
No. 601,291, patented Mar. 29, 1898 to D. L. Tschantz,
No. 609,438, patented Aug. 23, 1898 to C. S. Kershaw,
No. 717,410, patented Dec. 30, 1902 to Johnson & Scarborough
No. 729,968, patented June 2, 1903, to F. W. Smith,
No. 739,986, patented Sept. 29, 1903 to L. Chevenier,
No. 809,815, patented Jan. 9, 1906 to H. Koorie,
No. 811,440, patented Jan. 30, 1906 to W. F. Roberts,
No. 835,780, patented Nov. 13, 1906 to A. P. Boyer,
No. 876,935, patented Jan. 21, 1908, to A. P. Boyer,
No. 878,335, patented Feb. 4, 1908 to A. P. Boyer,
No. 942,735, patented Dec. 7, 1909 to H. A. Myers.

CHAPPRELL & EARL
Solicitors for Complainant.

Service of the above Praecipe acknowledged this 20th day of June, 1913.

V. H. LOCKWOOD,
Solicitors for Defendants.

Stipulati

UNITED STATES DISTRICT COURT,

District of Indiana.

The Goshen Manufacturing Company, *Complainant,* *vs.* The Hubert A. Myers Manufacturing Company and Hubert A. Myers, *Defendants.*	In Equity. No. 11087.

STIPULATION RE: TRANSCRIPT.

It is hereby stipulated and agreed by and between the parties hereto that the Transcript on Appeal shall consist of the matters specified in the praecipe hereto attached and that the clerk shall use printed copies of complainant's and Defendant's records as and for the transcript and need not make copies of any documentary or paper exhibits, but that the originals of all exhibits, paper and documentary, as well as mechanical, shall be forwarded by the Clerk to the Circuit Court of Appeals.

That one of the reasons for this stipulation that the transcript shall consist of the records as printed, is that the parties have sufficient numbers of such copies for use in preparing the records in the Court of Appeals, and it is stipulated and agreed that copies of such records may be used in the Court of Appeals.

That it is the mutual desire of the parties hereto that the order hereto attached relative to the Transcript on Appeal shall be duly entered.

CHAPPELL & EARL
Solicitors for Complainant.

Dated this 31st day of May, 1913.

V. H. LOCKWOOD,
Solicitor for Defendant Company.

On the 5th day of June, 1913.

206

No. 876,991. PATENTED JAN. 21, 1908.

H. A. MYERS.

HOISTING PULLEY.

APPLICATION FILED AUG. 14, 1906.

2 SHEETS—SHEET 1.

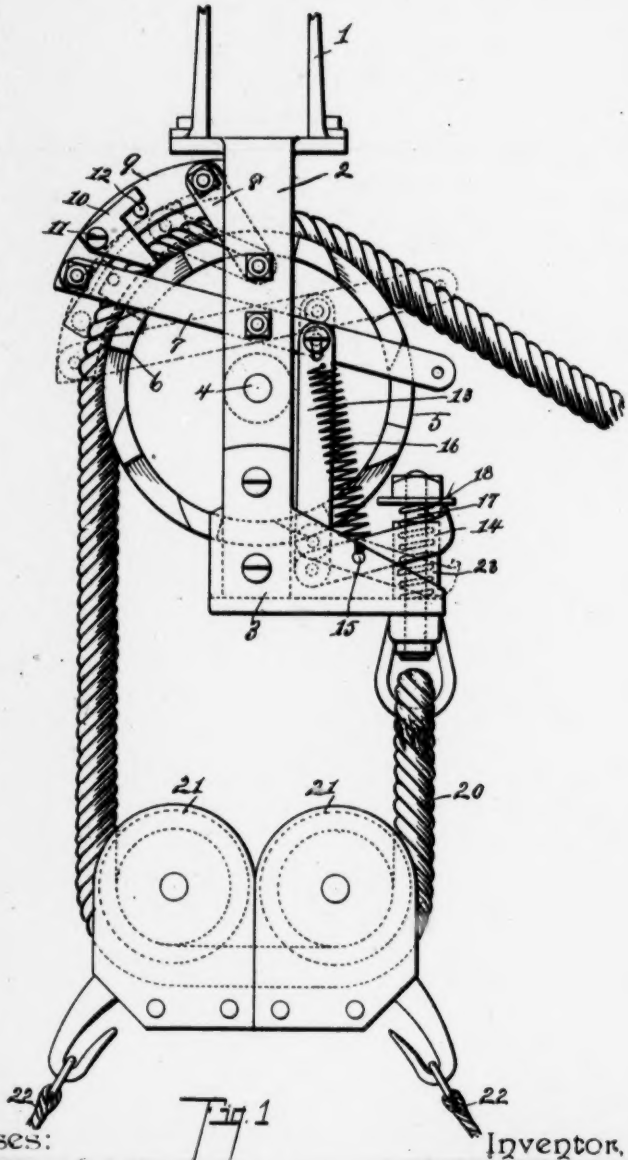


Fig. 1

Witnesses:

Luke G. Greenfield

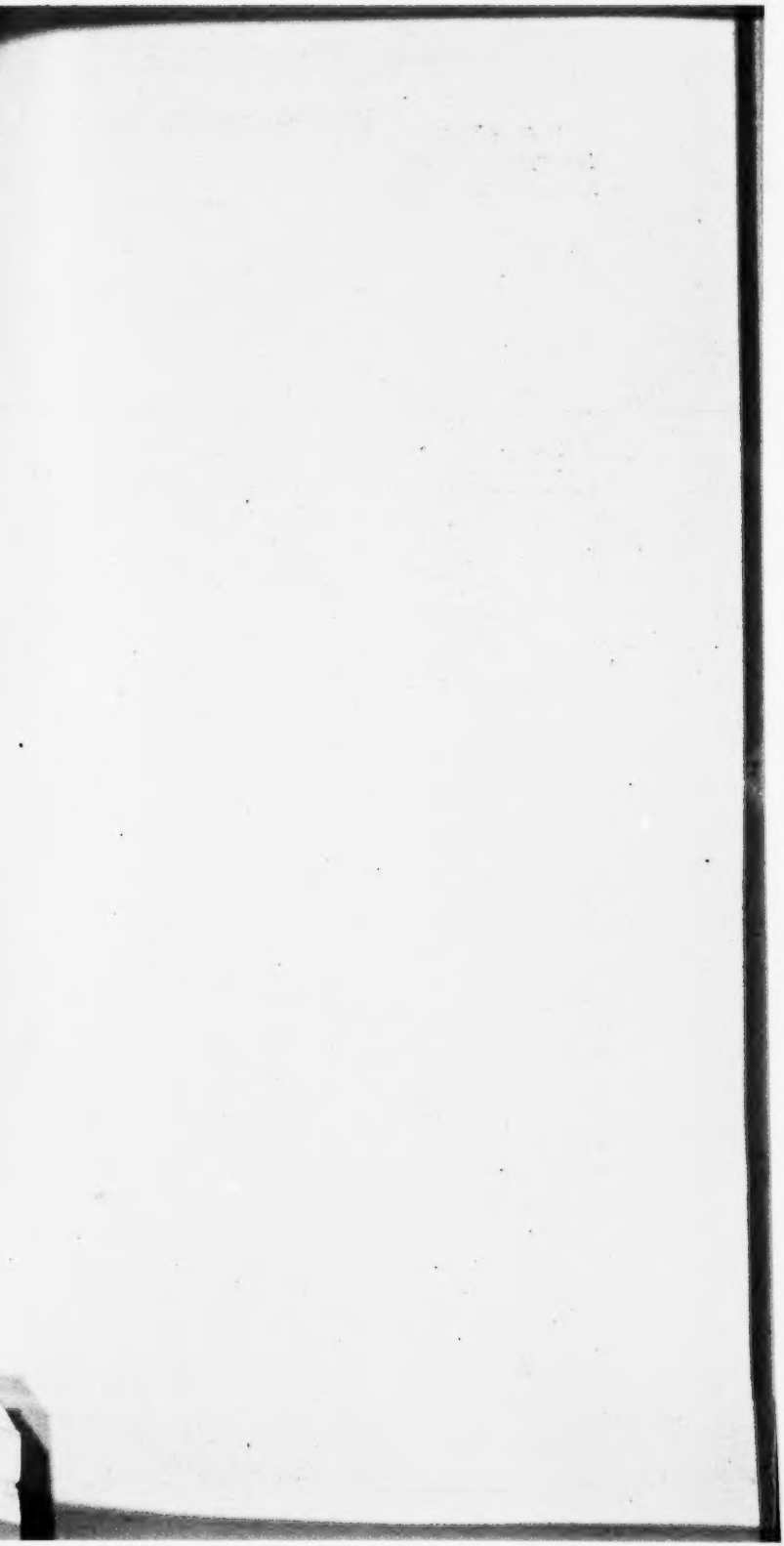
Gloria E. Braden

Inventor,

Hubert A. Myers

By Chappell & Carl

Att'ys.



No. 876,991. PATENTED JAN. 21, 1908.

H. A. MYERS.

HOISTING PULLEY.

APPLICATION FILED AUG. 14, 1906.

2 SHEETS—SHEET 2.

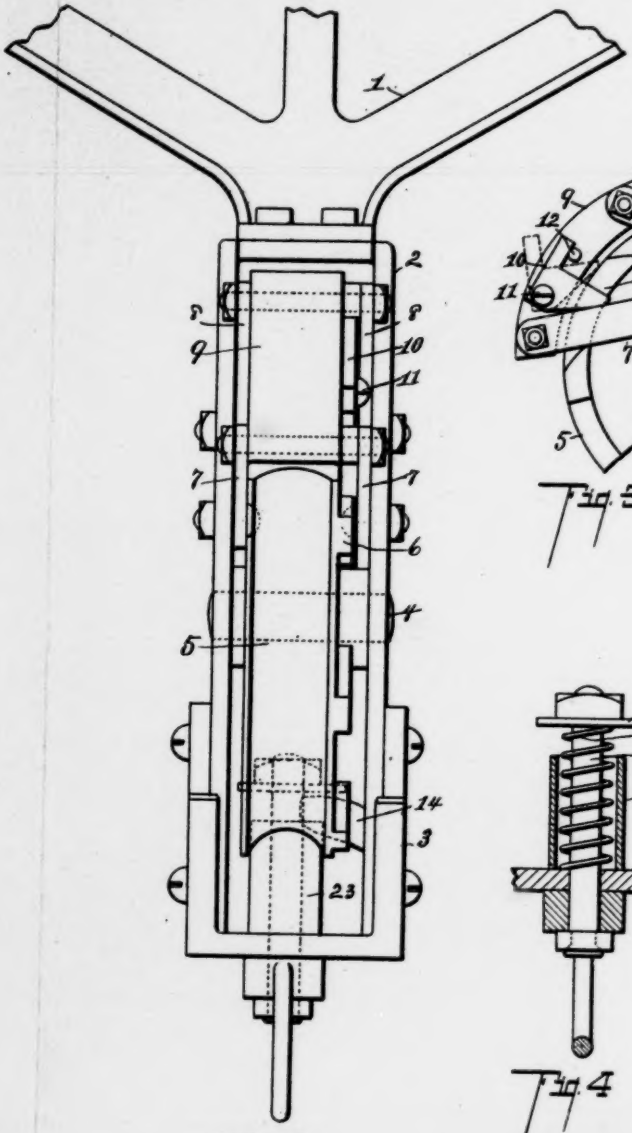


Fig. 2

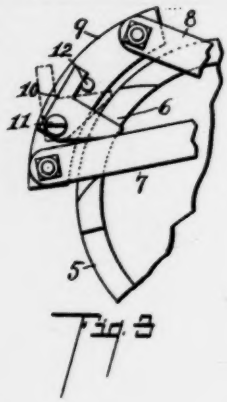


Fig. 3

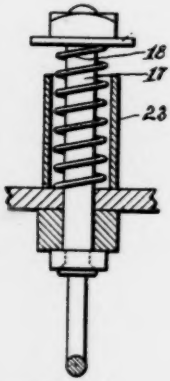


Fig. 4

Witnesses:

Louis J. Greenfield

Leland E. Braden

Inventor.

Herbert A. Myers

By Chappell & Earl

Att'ys

UNITED STATES PATENT OFFICE.

HUBERT A. MYERS, OF GOSHEN, INDIANA, ASSIGNOR TO ALLEN P. BOYER, OF GOSHEN, INDIANA.

HOISTING-PULLEY.

No. 876,991. Specification of Letters Patent. Patented Jan. 21, 1908.

Application filed August 14, 1906. Serial No. 330,550.

To all whom it may concern:

Be it known that I, HUBERT A. MYERS, a citizen of the United States, residing at Goshen, county of Elkhart, and State of Indiana, have invented certain new and useful Improvements in Hoisting-Pulleys, of which the following is a specification.

This invention relates to improvements in hoisting apparatus.

My improved hoisting apparatus is particularly designed for use in carriers, such as hay carriers and the like, although it is adapted and desirable for use in any relation where it is desired to lock a load in an elevated position.

The main object of this invention is to provide a hoisting apparatus adapted to automatically lock the load in position.

Further objects, and objects relating to structural detail, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing forming a part of this specification in which.

Figure 1 is a side elevation of a structure embodying the features of my invention. Fig. 2 is an elevation thereof, looking from the left of Fig. 1, the hoisting rope being removed. Fig 3 is an enlarged detail side elevation showing the clutch member 9 in its clamping position. Fig. 4 is a detail section showing structural details.

In the drawing, similar reference characters refer to similar parts throughout the several views.

Referring to the drawing, 1 represents the frame of a carrier or other support. The frame 2 is suspended from the support 1 and is preferably formed of vertical side pieces and a laterally projecting portion 3 at their lower ends.

The pulley 5 is journaled on a suitable spindle as 4. On the pulley 5 are laterally projecting teeth or projections 6 arranged at suitable intervals about the same. A clutch member 9, the inner face of which is preferably curved to correspond to the pulley, is carried by the lever 7 and the link 8. These jaw 9 are so arranged that when the clutch member is swung downwardly, it is forced inwardly against the rope arranged on the pulley clamping the same thereon. On the clutch 9 is a pawl 10 adapted, when the clutch is forced downwardly and inwardly from its normal position, to engage the teeth on the pulley so that on the backward movement of the pulley, when the pawl is in engagement therewith, the clutch is carried downwardly and drawn inwardly against the rope, as appears in dotted lines in Fig. 1.

In order that the clutch may be automatically actuated by the load, I provide a lever 14 which is pivoted at 15 and connected to the lever 7 by a suitable link 13. When this lever 14 is forced downwardly, it actuates the lever 7 throwing the pawl 10 into engaging position with the pulley so that on the rearward movement of the pulley, the clutch is drawn against the rope. The pulley itself serves as the other clamping member. Thus arranged, the greater the load the greater the clamping force of the clutch.

The hoisting rope, as 20, is connected to a movable member 17, preferably a swivel bolt which is arranged through the projection 3 of the pulley frame. A spring 18 is arranged on this bolt, the tension of the spring being sufficient to sustain the weight of the tackle, so that the clutch 9 is not actuated when there is no load. As soon as the rope 20 is carrying a load, the bolt is drawn downwardly engaging the lever 14, and, through the connections described, actuates the clutch by throwing it downwardly until the pawl 10 thereof is in position to engage the pulley.

A stop in the form of a sleeve 23 is provided for limiting the movement imparted by the weight of the load to the bolt so that the rope passes freely under the clutch until it is brought down into its clamping position by the rearward movement of the pulley.

The pawl 10 is pivoted at 11 so that on the forward movement of the pulley, it slips over the teeth. A stop 12 is provided for the pawl so that, as soon as the pulley moves rearwardly, as has been stated, the clutch is brought down into its clamping position.

In the structure illustrated, I show a pair of pulley blocks 21, having slings 22 connected thereto. These, of course, form no part of the invention.

gaging position by the spring 16 which is connected to the link 13 and to the frame.

By arranging the parts as I have illustrated and described, I provide a device by which the load is automatically locked in any position, the weight of the load serving to actuate the clutch. The pulley forms one of the clutch members, thereby simplifying the construction. The rope is clamped so that the wear thereon is reduced to a minimum.

In cases where it is desired to release the clutch while the rope is carrying a load, the same may be tripped by means of the lever 7, a rope or other connection being attached to the projecting end thereof.

I have illustrated and described my improved hoisting apparatus in detail in the form preferred by me on account of its structural simplicity and economy. I am, however, aware that it is capable of great variation in structural detail without departing from my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination with a frame, of a pulley having teeth thereon; a clutch member; a pawl carried thereby; a lever pivoted to said frame and to said clutch member; a link pivoted to said frame and clutch member, coacting with said lever to support said clutch member; a hoisting rope; a vertically movable member to which said rope is attached; a stop for limiting the downward movement of said member; a spring for holding said member normally upward; a lever actuated by said member on the downward movement thereof, connected to said clutch-carrying lever, whereby the clutch member is shifted to bring the pawl thereon into engaging position with said pulley; a spring for returning said clutch member to its initial position when released; and a trip for said clutch member, for the purpose specified.

2. The combination with a frame, of a pulley having teeth thereon; a clutch member; a pawl carried thereby; a lever pivoted to said frame and to said clutch member; a link pivoted to said frame and clutch member, coacting with said lever to support said clutch member; a hoisting rope; a vertically movable member to which said rope is attached; a stop for limiting the downward mvement of said member; a spring for holding said member normally upward; a lever actuated by said member on the downward movement thereof, connected to said clutch-carrying lever, whereby the clutch member is shifted to bring the pawl thereon into engaging position with said pulley; a spring for returning said clutch member to its initial position when released, for the purpose specified.

3. The combination with a frame, of a pulley having teeth thereon; a clutch member; a pawl carried thereby; a lever pivoted to said frame and to said clutch member; a link pivoted to said frame and clutch member, coacting with said lever to support said clutch member; a hoisting rope; a vertically movable member to which said rope is attached; a stop for limiting the downward movement of said member; a spring for holding said member normally upward; a lever actuated by said member on the downward movement thereof, connected to said clutch-carrying lever, whereby the clutch member is shifted to bring the pawl thereon into engaging position with said pulley; and a trip for said clutch for the purpose specified.

4. The combination with a frame, of a pulley having teeth thereon; a clutch member; a pawl carried thereby; a lever pivoted to said frame and to said clutch member; a link pivoted to said frame and clutch member, coacting with said lever to support said clutch member; a hoisting rope; a vertically movable member to which said rope is attached; a stop for limiting the downward movement of said member; a spring for holding said member normally upward; and a lever actuated by said member on the downward movement thereof, connected to said clutch-carrying lever, whereby the clutch member is shifted to bring the pawl thereon into engaging position with said pulley, for the purpose specified.

5. The combination with a frame, of a pulley having teeth thereon; a clutch member; a pawl carried thereby; a lever pivoted to said frame and to said clutch member; a link pivoted to said frame and clutch member, coacting with said lever to support said clutch member; a hoisting rope; a vertically movable member to which said rope is attached; a lever actuated by said member on the downward movement thereof, connected to said clutch-carrying lever, whereby the clutch member is shifted to bring the pawl thereon into engaging position with said pulley; a spring for returning said clutch member to its initial position when released; and a trip for said clutch member, for the purpose specified.

6. The combination with a frame, of a pulley having teeth thereon; a clutch member; a pawl carried thereby; a lever pivoted to said frame and to said clutch member; a link pivoted to said frame and clutch member, coacting with said lever to support said clutch member; a hoisting rope; a vertically movable member to which said rope is attached; a lever actuated by said member on the downward movement thereof, connected to said clutch-carrying lever, whereby the clutch member is shifted to bring the pawl thereon into engaging position with said pulley; and a spring for returning said clutch member to its initial position when released, for the purpose specified.

7. The combination with a frame, of a pulley having teeth thereon; a clutch member; a pawl carried thereby; a lever pivoted to said frame and to said clutch member; a link pivoted to said frame and clutch member, co-acting with said lever to support said clutch member; a hoisting rope; a vertically movable member to which said rope is attached; a lever actuated by said member on the downward movement thereof, connected to said clutch-carrying lever, whereby the clutch member is shifted to bring the pawl thereon into engaging position with said pulley; and a trip for said clutch, for the purpose specified.

8. The combination with a frame, of a pulley having teeth thereon; a clutch member; a pawl carried thereby; a lever pivoted to said frame and to said clutch member; a link pivoted to said frame and clutch member, coacting with said lever to support said clutch member; a hoisting rope; a vertically movable member to which said rope is attached; and a lever actuated by said member on the downward movement thereof, connected to said clutch-carrying lever, whereby the clutch member is shifted to bring the pawl thereon into engaging position with said pulley, for the purpose specified.

9. The combination with a frame, of a pulley having teeth thereon; a clutch member; supporting links for said clutch member; a pawl carried by said clutch; a hoisting rope; a movable member to which said rope is attached, connected to said clutch, whereby the same is actuated to bring the pawl thereof into engagement with said pulley; a spring for returning said movable member to its initial position; a spring for returning said clutch member to its initial position when released; and a trip for said clutch member, for the purpose specified.

10. The combination with a frame, of a pulley having teeth thereon; a clutch member; supporting links for said clutch member; a pawl carried by said clutch; a hoisting rope; a movable member to which said rope is attached, connected to said clutch, whereby the same is actuated to bring the pawl thereof into engagement with said pulley; a spring for returning said movable member to its initial position; and a spring for returning said clutch member to its initial position when released, for the purpose specified.

11. The combination with a frame, of a pulley having teeth thereon; a clutch member; supporting links for said clutch member; a pawl carried by said clutch; a hoisting rope; a movable member to which said rope is attached, connected to said clutch, whereby the same is actuated to bring the pawl thereof into engagement with said pulley; and a trip for said clutch member, for the purpose specified.

12. The combination with a frame, of a pulley having teeth thereon; a clutch member; supporting links for said clutch member; a pawl carried by said clutch; a hoisting rope; and a movable member to which said rope is attached, connected to said clutch, whereby the same is actuated to bring the pawl thereof into engagement with said pulley, for the purpose specified.

13. The combination with a frame, of a pulley having teeth thereon; a movably supported clutch member; a pawl carried by said clutch; a hoisting rope; a movable member to which said rope is attached, connected to said clutch whereby the same is actuated to bring the pawl thereof into engagement with said pulley; a spring for returning said movable member to its initial position; a spring for returning said clutch member to its initial position when released; and a trip for said clutch member, for the purpose specified.

14. The combination with a frame, of a pulley having teeth thereon; a movably supported clutch member; a pawl carried by said clutch; a hoisting rope; a movable member to which said rope is attached, connected to said clutch whereby the same is actuated to bring the pawl thereof into engagement with said pulley; a spring for returning said movable member to its initial position; and a spring for returning said clutch member to its initial position when released, for the purpose specified.

15. The combination with a frame, of a pulley having teeth thereon; a movably supported clutch member; a pawl carried by said clutch; a hoisting rope; a movable member to which said rope is attached, connected to said clutch whereby the same is actuated to bring the pawl thereof into engagement with said pulley; and a trip for said clutch member, for the purpose specified.

16. The combination with a frame, of a pulley having teeth thereon; a movably supported clutch member; a pawl carried by said clutch; a hoisting rope; and a movable member to which said rope is attached, connected to said clutch whereby the same is actuated to bring the pawl thereof into engagement with said pulley, for the purpose specified.

17. The combination with a frame of a pulley having teeth thereon; a movably supported clutch member; a pawl carried by said clutch member; means for holding said clutch member yieldingly out of its engaging position; and means for actuating said clutch member to bring the said pawl carried thereby into engagement with said pulley, said pawl being arranged so that the rearward revolution of the pulley draws the clutch member into clamping engagement with the rope, said clutch actuating means being adapted to be actuated by the load upon the hoisting rope.

18. The combination with a frame of a pulley; a movably supported clutch member adapted to co-act with the pulley in clamping a rope; means for holding said clutch member normally out of its engaging position; means for connecting said clutch member to said pulley, arranged so that the rearward revolution of the pulley draws the clutch member into clamping engagement with the rope, the said means being adapted to be actuated by the hoisting rope when the load thereon is sufficient to counteract the means for holding said clutch member out of its engaging position, said clutch member being adapted to automatically return to its initial position when the hoisting rope is relieved of the load.

19. The combination with a frame of a pulley; a movably supported clutch member; means for connecting said clutch member to said pulley arranged so that the rearward revolution of the pulley draws the clutch member into clamping engagement with the rope, said means being adapted to be actuated by the load on the hoisting rope; and means for automatically disengaging said connecting means from said pulley when the hoisting rope is relieved of its load.

20. The combination with a frame, of a pulley having teeth thereon; a clutch member having a curved gripping face arranged to co-act with the pulley in gripping a rope; supporting links for said clutch member arranged in pairs so that both ends of said clutch member have a substantially uniform movement throughout the movement of the clutch member; and a pawl carried by said clutch member adapted to engage the teeth on said pulley whereby said clutch member is actuated.

21. The combination with a frame, of a pulley having teeth thereon; a clutch member having a curved gripping face adapted to co-act with the pulley for clamping a rope; supporting links for said clutch member arranged so that all parts of the gripping face of the said clutch member are at substantially uniform distances from the axis of the pulley throughout the movement of said clutch; and a pawl carried by said clutch member adapted to engage the teeth of said pulley whereby said clutch member is actuated.

22. The combination with a frame, of a pulley having teeth thereon; a clutch member having a curved gripping face adapted to co-act with the pulley for clamping a rope; supporting links for said clutch member arranged so that all parts of the gripping face of the said clutch member are at substantially uniform distances from the axis of the pulley throughout the movement of the said clutch; and means for connecting said clutch member to said pulley whereby said clutch is brought into action on the rearward movement of the pulley, for the purpose specified.

23. The combination with a frame, of a pulley; a clutch member having a curved gripping face adapted to co-act with the pulley for clamping a rope; supporting links for said clutch member arranged so that all parts of the gripping face of the said clutch member are at substantially uniform distances from the axis of the pulley throughout the movement of the said clutch; and means for connecting said clutch member to said pulley whereby said clutch is brought into action on the rearward movement of the pulley, for the purpose specified.

24. The combination with a frame of a pulley; a movable clutch member adapted to co-act with the pulley in clamping a rope, said clutch member being normally held in an inoperative position; means for connecting said clutch member to said pulley arranged so that the rearward revolution of the pulley draws the clutch member into clamping engagement with the rope, said means being adapted to be actuated by the load on the hoisting rope, and means for automatically returning said clutch member to its initial, or disengaging position and disengaging the said pulley connecting means thereof when the hoisting rope is relieved of its load.

25. The combination with a frame of a pulley; a movably supported clutch member; a pulley engaging pawl carried by said clutch member arranged so that when it is in its engaging position the rearward revolution of pulley draws the said clutch member into clamping engagement with the rope; a hoisting rope, connections therefor to said clutch member whereby the same is actuated to bring said pawl connecting means into its pulley engaging position, and means for automatically returning said clutch member to its initial position when said pawl is disengaged from said pulley.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

HUBERT A. MYERS. [L. S.]

Witnesses:

J. A. SNAPP,

FRANK DRIPE.

G. VAN SICKLE.

HAY-ELEVATOR.

No. 7,681. Reissued May 15, 1877.

Fig: 1.

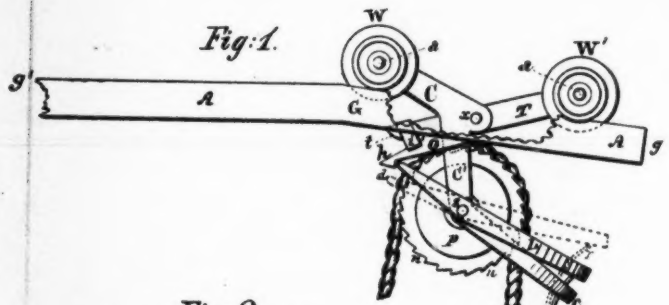


Fig: 2.

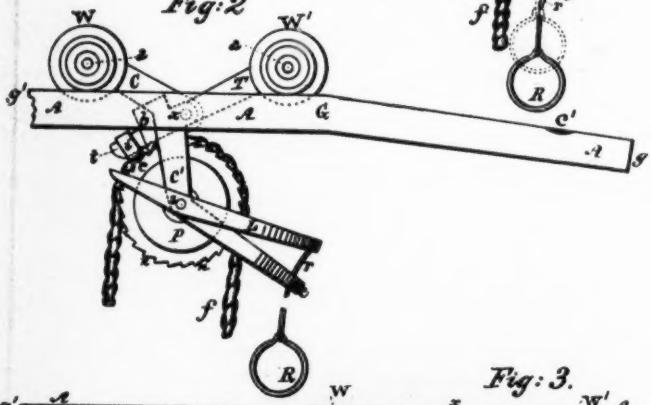


Fig: 3.

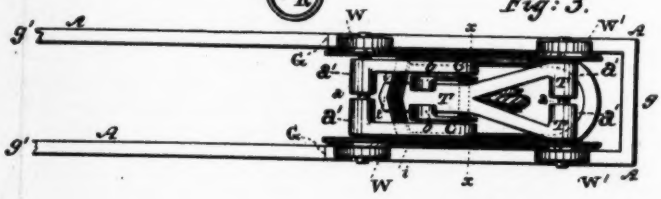


Fig: 4.

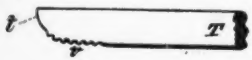
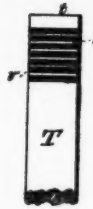


Fig: 5.



WITNESSES

K. K. Young
C. B. Fowler.

INVENTOR

Garrett Van Sickle
By W. T. Burris
ATTORNEY

UNITED STATES PATENT OFFICE.

GARRETT VAN SICKLE, OF SHORTSVILLE, NEW YORK.

IMPROVEMENT IN HAY-ELEVATORS.

Specification forming part of Letters Patent No. 148,009, dated February 24, 1874; reissue No. 7,681, dated May 15, 1877; application filed March 9, 1877.

To all whom it may concern:

Be it known that I, GARRETT VAN SICKLE, of Shortsville, in the county of Ontario and State of New York, have invented certain new and useful Improvements in Hay-Elevators; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification, in which drawings—

Figure 1 is a side view showing the car in position for loading. Fig. 2 is a side view showing the car moved forward on the track for unloading. Fig. 3 is a plan view with the car in position shown in Fig. 1. Fig. 4 is a side view of the lower part of the corrugated brake, and Fig. 5 is a view of the under side of the same.

My invention relates to car-elevators; and consists of devices attached to a car mounted on a track, for holding the car in place while it is being loaded, and releasing it when loaded, for elevating the hay or grain, and for stopping and holding the hoisting rope or slings at any required point, as hereinafter fully described.

W W′ represent the wheels, *a a* the axles, and C C T the couplings, of the car, mounted on the ways A A, made any required length, and adjusted in the proper position in the barn.

A track entirely horizontal allows the car, when loaded, to start too suddenly, jerking and scattering the hay from the fork or slings; and a track the entire length of which is sufficiently inclined to prevent the too sudden starting of the car requires the continued application of the power to move the car to the required point for depositing the load. To avoid these difficulties I make a track with an angle or bend, as shown at G, and depress that part of the track from G to *g* sufficiently to form the required up-grade, to prevent the too sudden starting of the car; and the other part of the track—viz., from G to *g′*—may be horizontal or very slightly inclined, so that when the car, in being drawn forward, reaches the angle or bend it can be readily moved forward by hand to the required point.

The track is provided, also, with depressions at *c′* for the wheels W′ to descend into as the car returns to the position for loading, which aids in raising the brake to release the rope.

The ends *a′* of the couplings are provided with holes tapered from each side to the middle, forming tapering sleeves for the axles, and these sleeves are divided in the middle, to allow the axles to oscillate up and down and laterally, thus giving play to the wheels, to enable them to pass over obstructions or uneven surfaces on the track, or to run on curved or crooked tracks, without injury or strain to the wheels and connecting parts or oscillation of the car.

The couplings are jointed at *x*, forming a longitudinal flexure, to allow the required motion of the corrugated brake *t*, which is formed on the under part of the extension of the coupling T, as shown in the drawings, and is adjusted to bear upon the hoisting-rope in the pulley, to stop and hold the rope or slings in any required position, or at any required point.

The coupling-pieces C C are extended, forming the arms C′ C′, which are connected at *s* by the rod which forms the shaft for the pulley P; and these pieces are further extended, forming arms *c c*, which are connected at or near their ends, forming guides for the hoisting ropes and slings.

The pulley is provided with a groove large enough to receive the hooks and rings connecting the hoisting-rope with the slings, so that the rope and the slings, when required, may be drawn over the pulley and through the car to release the slings from the hay after the car is unloaded. The edges of the pulley are provided with ratchet-teeth *n*, to receive the pawls *b*, which are pivoted on the bolt of the joint *x*, which pawls hold the pulley from revolving backward when the rope is required to be stopped and held on the pulley.

As hay is often required to be deposited at different heights it is important to be able to stop and hold the hoisting-rope at any required point. This, it will be seen, I have effectually

accomplished by means of the corrugated brake, adjusted to be pressed upon the rope on the pulley by the weight of the load carried by the rope over the pulley, having its bearings on the extensions of the car-couplings. The brake is adjusted to bear on the rope on the side of the pulley opposite from the weight of the load, thus balancing the load on the one side of the pulley by the pressure of the brake on the opposite side; and the greater the weight the greater the holding-pressure upon the rope.

L represents detent-levers, connected at the lower ends, pivoted on the pulley-shaft at *s*, and extended sufficiently to catch against the shoulders *d* on the plates O, which plates are rigidly attached to the sides of the track. The upper edges of the plates O are constructed to form inclined guides *h*, to receive the ends of the bar *i*, attached to the lower part of the brake *t*, to raise the brake, and thus release the hoisting-rope.

R is a ring, connected by rods *r* to the levers L, for releasing the detent-levers from the shoulders *d*, to allow the car to move forward when the ascending load has reached the required height.

The car being in position for loading, as shown in Fig. 1 of the drawings, the hoisting-rope *f*, extended through the ring R, is connected with the sling or fork holding the hay to be elevated, and, by the power applied to the other end of the rope, the load is elevated till the ring R is raised, moving the levers into the position indicated by the dotted lines in Fig. 1.

The forward movement of the car brings the brake to bear upon the rope on the pulley, and allows the pawls to drop into the ratchet-teeth on the pulley, thus stopping the pulley and the rope from running backward, but at the same time allowing a forward movement of the rope and pulley when for any purpose such movement may be required; and, after the load is discharged, the hoisting-rope may be drawn forward far enough to release the slings from the hay, or to raise the slings and connecting devices above any beams in the way of their return with the car for reloading.

The return of the car is facilitated by the inclination and depressions of the track. As the car returns the ends of the bar *i* slide up the inclined guides *h*, raising the brake, releasing the rope, and permitting the slings or fork to descend for another load. When the returning car reaches the position for reloading, the levers automatically adjust themselves against the detent-shoulders *d*.

What I claim as new, and desire to secure by Letters Patent, is—

1. A hay or grain elevator having a brake constructed and adjusted to be moved into position to bear upon and hold the hoisting-rope from running back on the pulley by the forward movement of the car and the weight of the load, substantially as described.

2. The car-couplings C C T, having a joint forming a longitudinal flexure, substantially as and for the purposes described.

3. The car-axles *a*, adjusted to oscillate and allow play for the wheels, substantially as and for the purposes described.

4. The detent-levers L, having ring R attached to their lower part, in combination with the detent-shoulders *d* on the plates O, fastened to the rails of the track, substantially as and for the purposes described.

5. The pulley P, provided with ratchet-teeth *n*, in combination with the pawls *b*, brake *t*, having corrugations *v*, and hoisting-rope *f*, substantially as and for the purposes described.

6. The cross-bar *i*, in combination with the inclined guides *h*, for releasing the hoisting-rope, substantially as described.

7. The extended arms *c c*, adjusted to form guides for the hoisting-rope, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of March, 1877.

GARRETT VAN SICKLE.

Witnesses:
G. B. TOWLES,
H. A. DANIELS.

JAMIN BELLAIR

218

No. 95971

SAFETY TACKLE

FIG.1.

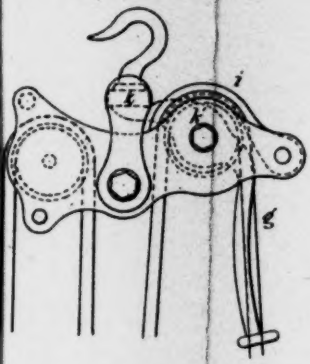


FIG.2.

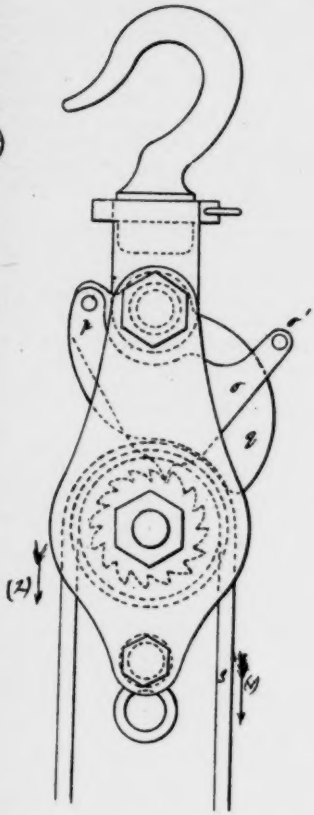


FIG.3.

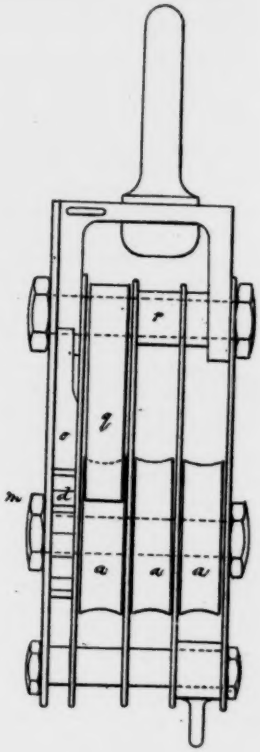


FIG.4.

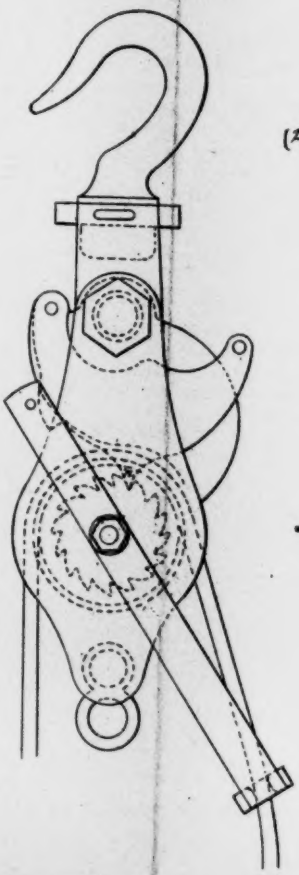
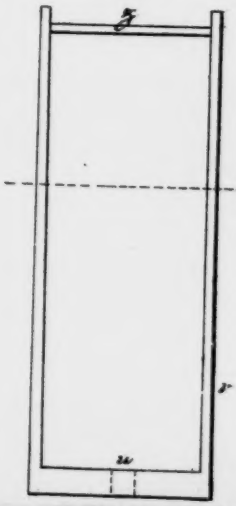


FIG.5.



PATENTED

OCT 19 1869

Benjamin Bellair

by his attorney

A. Pollock

WITNESSES.

M. Bailey

Wm. H. H. Cabell.

THE NORRIS PETERS CO., WASHINGTON, D. C.

United States Patent Office.

BENJAMIN BELLAIR, OF PARIS, FRANCE.

Letters Patent No. 95,971, *dated October* 19, 1869.

IMPROVED SAFETY-TACKLE.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, BENJAMIN BELLAIR, of Paris, in the Empire of France, have invented certain new and useful Improvements in Safety-Tackle; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings.

My present invention consists—

First, in an improved safety-arrangement applicable to vibratory tackle, which, however, is not here claimed.

Second, in a new and improved construction and arrangement of a safety-tackle.

The improved safety-arrangement applicable to ordinary vibratory tackle is shown in Figure 1, which represents a side view of such tackle.

The improvement consists in the employment of a brake, *i*, which embraces a large portion of the rope, where it passes over the pulley, and is pivoted at its outer end, so that its curved portion, which constitutes the brake proper, can move around the axis *k*. This brake receives the pressure required, in order to hold the cord, by means of a piece, *k*, in such manner that when the workman looses his hold on the rope, the weight of the burden, by causing the block to tilt, as is usual in tackle of this kind, will cause the piece *k* to press upon the brake *i*, which, in its turn, will be pressed upon the rope, not only at one point, but over the whole upper portion of the pulley.

The effect of this arrangement is to avoid the wear of the rope, which, in ordinary tilting-tackle, is produced by direct pressure of the piece *k* upon the rope.

Figures 2 and 3 represent a side and a front elevation of my improved safety-tackle.

As there shown, I mount on the axis of the pulleys *a*, a ratchet-wheel, *d*, which is covered and protected by the outer cheek or face *m* of the block.

The pulleys are mounted loosely upon their common axis, and move independently of each other, as is usual; but that pulley next to the ratchet-wheel, and to which the brake is applied, is united with said wheel, so that both have a common movement.

With the teeth of the wheel *d* engages a projection or tooth, *n*, formed on the pawl-piece *o*, which is pivoted at *p* to the brake proper, *q*. The latter is mounted and oscillates upon the axis *r*, which is placed in the upper part of the pulley-block, and is so located that the brake, at the desired moment, can drop into the proper position to take hold of the rope passing over the pulley above which said brake is placed.

Under this arrangement, when the workman pulls upon the rope *s*, in the direction of the arrow 1, for the purpose of elevating the load at the other end of the rope, the pawl *o* will ride freely over the teeth of the ratchet *d*, but when he at any time looses his hold, however, at once causes the brake *q* to compress the rope with great force, while the tooth *n* of the pawl will at once engage with the ratchet-wheel, and thus instantly arrest the rotation of the pulley with which said wheel is united, and upon which the brake is now pressing.

When, on the contrary, the workman desires to allow the load to descend freely, he draws upon a cord which is fastened to the pawl *o* at *o'*, passes up through the eye *r'* on the pulley-block, and thence extends down so as to be within convenient reach of the hand. By pulling this cord, the pawl *o* is raised, and moved independently of the brake *q*, until it strikes, at or near its middle, against the top of the block. The pawl then becomes a lever to raise the brake, the power being applied at the point *o'*, the resistance being at *p*, and the fulcrum being its point of contact with the block, and by pulling on the cord, the pivoted end of the pawl will be forced down, carrying with it the axis *p*, which is united with the brake, and causing the latter to vibrate upon its axis *r* so as to be removed from contact with the rope on the pulley.

The load is now free to descend, and its downward movement can be checked at any point by releasing the cord and allowing the pawl and brake to drop back to their normal positions.

Instead of employing an auxiliary cord to unlock the brake and pawl, the rope itself may be made use of for the purpose. To this end I have devised the arrangement shown in Figure 4, which consists in causing the rope, which is on the side of the block opposite to that from which the load is supported, to pass through a hole, *u*, in the frame *v*, which latter is mounted on the axis of the pulleys, and is shown detached in Figure 5.

By drawing down the rope vertically, the frame will turn upon its axis, and the cross-bar *z*, at its upper end, will raise first the pawl, and then the brake so as to disengage both, and thus allow the ratchet, pulley, and rope to move freely.

Having thus described my invention, and the manner in which the same is or may be carried into effect,

What I claim, and desire to secure by Letters Patent, is—

The arrangement in the block, and with relation to the pulley and ratchet-wheel fixed to the same, of the pawl *o* suspended above the ratchet-wheel, and pivoted to the rear end of the brake *q*, which vibrates upon an axis over the pulley, and is actuated by said pawl, as herein shown and specified.

In testimony whereof, I have signed my name to this specification, before two subscribing witnesses.

BELLAIR.

Witnesses:

222

(No Model.)

4 Sheets—Sheet 1.

W. G. RICKER.

HAY CARRIER.

No. 334,614. Patented Jan. 19, 1886.

Fig. 1.

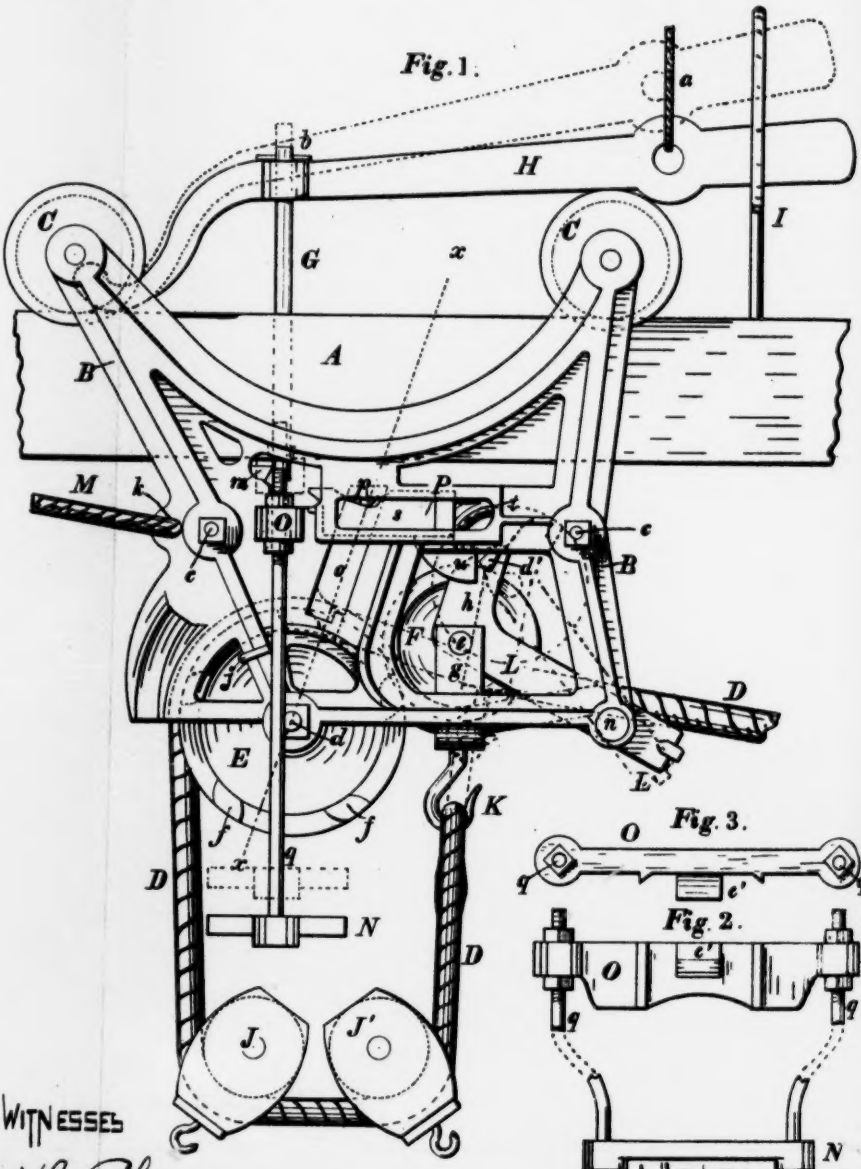


Fig. 3.

Fig. 2.

WITNESSES

H. G. Phillips

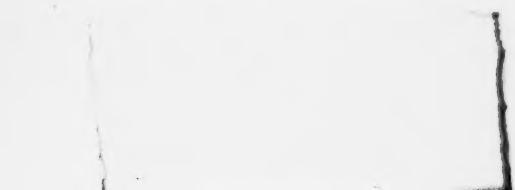
D. Bannister

INVENTOR

Wentworth G. Ricker,

by Geo. B. Selden,

Atty.



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W. G. RICKER.

HAY CARRIER.

No. 334,614. Patented Jan. 19, 1886.

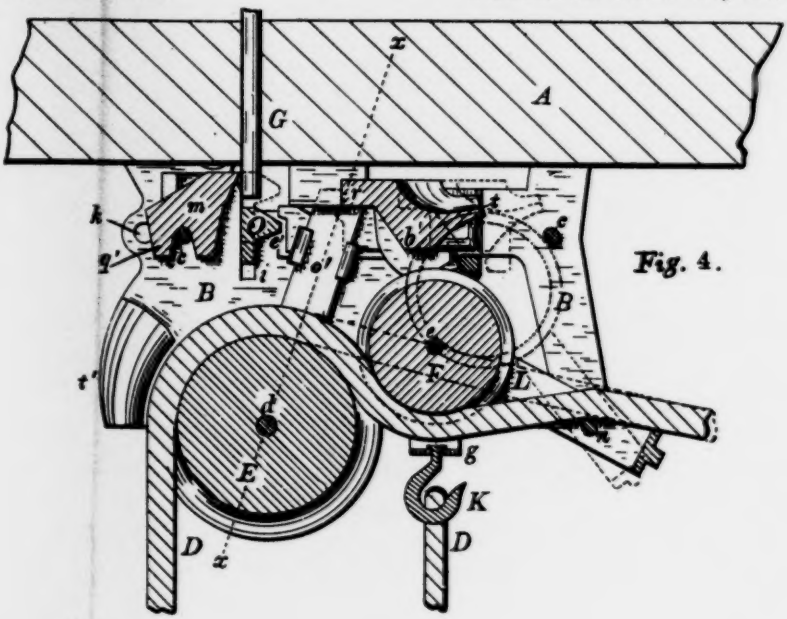


Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

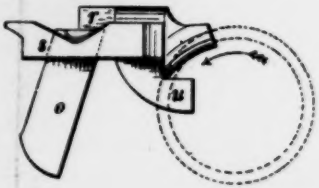
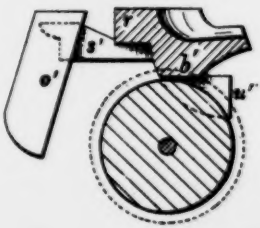


Fig. 8.



WITNESSES
H. G. Phillips.
D. Dennison

INVENTOR
Wentworth G. Ricker,
by Geo. B. Selden,
Attorney

(No Model.)

4 Sheets—Sheet 3.

W. G. RICKER.

HAY CARRIER.

No. 334,614. Patented Jan. 19, 1886.

Fig. 9.

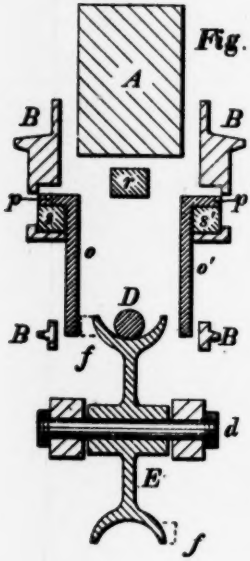


Fig. 10.

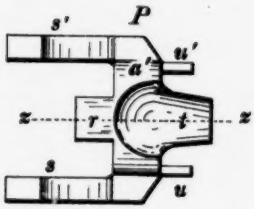


Fig. 11.

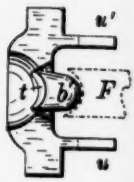


Fig. 12.

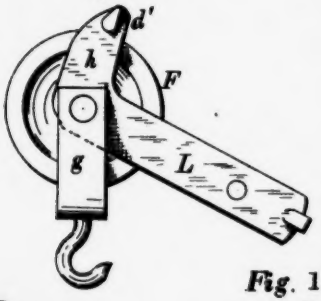


Fig. 13.

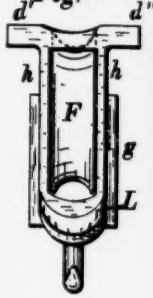


Fig. 14.

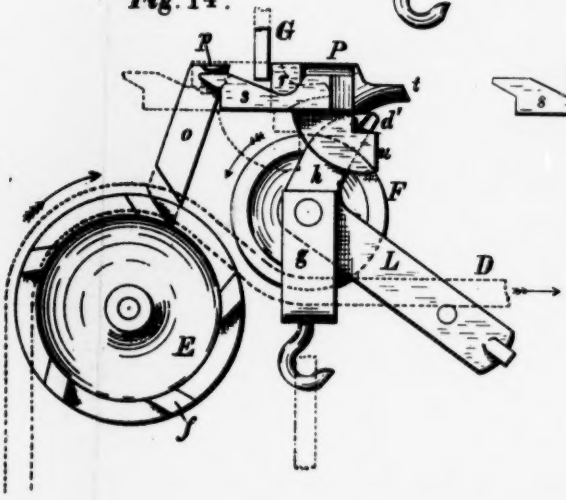
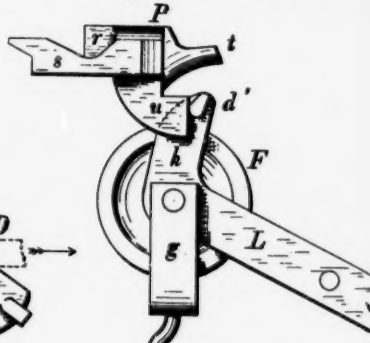


Fig. 15.



WITNESSES

H. G. Phimps.

D. Dennistow.

INVENTOR

Wentworth G. Ricker

by Geo. B. Selden

Attorney

228

(No Model.)

W. G. RICKER.

HAY CARRIER.

4 Sheets—Sheet 4

No. 334,614. Patented Jan. 19, 1886.

Fig. 16.

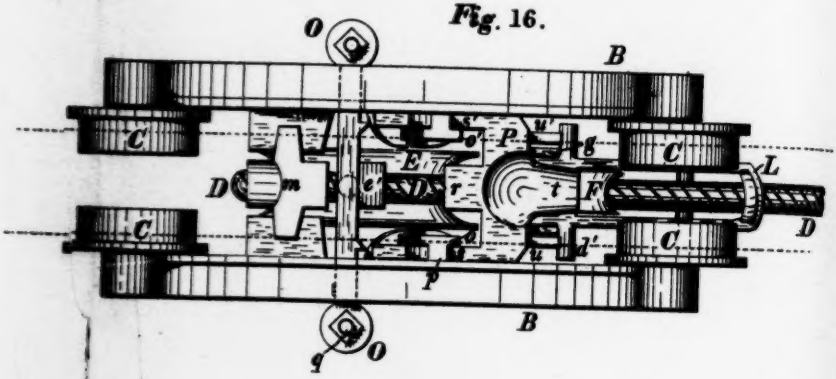


Fig. 18.

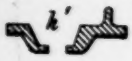
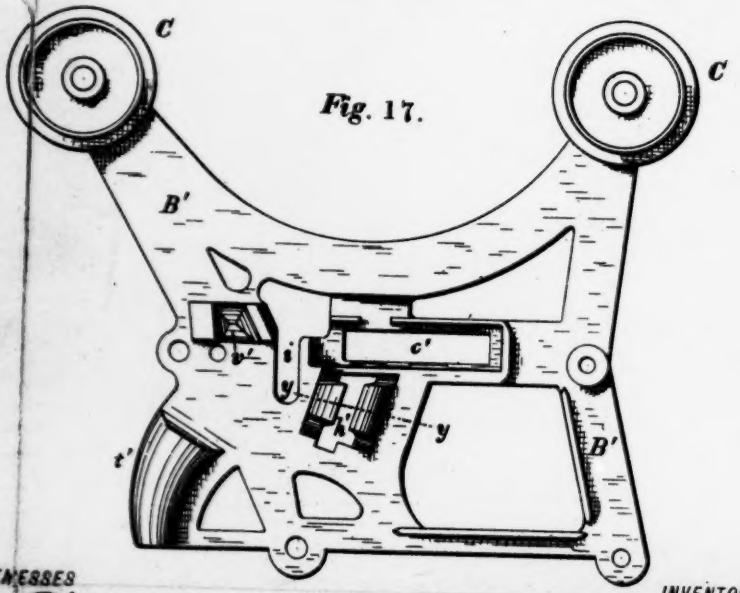


Fig. 19.

Fig. 20.

Fig. 17.



WITNESSES

H. G. Phillips.

W. Dennistow.

INVENTOR

Wentworth G. Ricker

by Geo. B. Selden

Attorney

UNITED STATES PATENT OFFICE.

WENTWORTH G. RICKER, OF ROCHESTER, NEW YORK.

HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 334,614, dated January 19, 1886.

Application filed June 26, 1885. Serial No. 169,868. (No model.)

To all whom it may concern:

Be it known that I, WENTWORTH G. RICKER, of Rochester, New York, have invented certain Improvements in Hay-Carriers, of which the following is a specification, reference being had to the accompanying drawings.

My present invention relates to certain improvements on the hay-carrier patented to me September 11, 1883, No. 284,903, which improvements consist, principally, in attaching the binding pulley to a swinging frame pivoted to the frame of the machine in such relation to the carrier-sheave as to bind or clamp the draft-rope more firmly between the pulleys and sheave when the draft is released, and in certain other changes and additions by which the apparatus is arranged to work more effectively, all as hereinafter more fully described and claimed.

My improvements in hay-carriers are represented in the accompanying drawings, in which Figure 1 is a side elevation. Fig. 2 represents the sliding trip-frame detached. Fig. 3 represents the trip-bar, as seen from above. Fig. 4 is a central longitudinal section showing the parts beyond the plane of section. Fig. 5 represents one of the sliding dogs. Fig. 6 is another view of the same. Fig. 7 is a side view of the sliding cam and one of the dogs. Fig. 8 is a central longitudinal section through the sliding cam and binding-pulley on line *z z*, Fig. 10. Fig. 9 is a section on the line *x x*, Fig. 1. Fig. 10 is a plan view of the sliding cam. Fig. 11 is an end view of the same, as seen from the right hand in Fig. 10. Fig. 12 is a side elevation of the binding pulley and frame detached. Fig. 13 is an elevation of the same, as seen from the right hand in Fig. 12. Fig. 14 is a side elevation of the main carrier-sheave, binding pulley and frame, sliding cam, and dogs. Fig. 15 is a side elevation of the binding pulley and frame, and the sliding cam, in different positions from that shown in Fig 14. Fig. 16 is a plan view, the track-beam being removed. Fig. 17 is an elevation of one of the side frames, as seen from the inside. Fig. 18 is a section of a portion of the frame on the line *y y*, Fig. 17. Fig. 19 is an end view of the stop-block. Fig. 20 is a side view of the same.

In the accompanying drawings, A is the track-beam, which supports the frame-work B B of my improved hay-carrier, by means of the flanged wheels C C, which turn on studs attached to the upper part of the frame. The two frames B B inclose the track-beam and the operative parts of the apparatus between them, being connected together by bolts or rods *c c*, *d*, and *n*. The wheels C C are arranged in two sets applied to the inside of those portions of the frame-work which extend above the track-beam, an interval or space being left between the inner faces of the wheels, to permit the passage of the catch-pin G and lever H, if the latter be used, between the wheels when the carrier travels along the track-beam.

D is the draft-rope, one end of which is attached to the binding-pulley F by means of the clevis *g* and hook K, while the other end, after passing through the pulley block or blocks J J', to which any ordinary slings or hay-fork may be attached, is carried over the sheave E and under the binding-pulley F, and led off through suitable corner-pulleys, if necessary, and connected to the source of power by which the machine is operated.

M is the return-rope, which is simply for drawing the carrier backward after the delivery of the load from the slings or fork, and may be led through any suitable corner-pulleys. It is inserted and fastened in a staple or hole, *k*, in one of the side frames, B B'. The slings are attached to the hooks on the pulley-blocks J J', and their construction and mode of operation are too well known to require further description here.

When my improved hay-carrier is used with a fork, only a single pulley-block J will be necessary.

G is a catch-pin or detent, arranged to slide through the track-beam A, and operating to hold the carrier in place on the track during the elevation of the load and also to arrest the return movement of the carrier and hold it in position over the load. The binding-pulley F operates, in connection with the sliding dogs *o o'*, to hold the load at any desired point during its elevation whenever the strain on the draft-rope D is released by accident or design.

As shown in Fig. 1 of the drawings hereto

annexed, the carrier is represented as arranged to travel toward the right hand, the strain of the draft-rope being resisted by the stop-block *m*, bearing against the lower end of the sliding catch-pin G. When the load has been elevated, the pulley block or blocks J J′ strike against the plate N at the lower end of the trip-frame and cause it to move upward, as indicated by the dotted lines in Fig. 1, and the trip-bar O raises the catch-pin G so as to release it from the stop-block *m*, and thus allows the carrier to travel along the track-beam toward the right hand. My improved hay-carrier may, however, be arranged to travel in the opposite direction without making any alterations in it, by simply placing it on the track-beam in a position the reverse of that shown in Fig. 1.

Referring now more particularly to the details of the construction of my improved hay-carrier, it will be observed that the main carrying-sheave E is arranged to rotate freely on a bolt or stud, *d*, secured to the side frames, B B′, and that it has a peripheral groove in which the draft-rope D runs, the edges or flanges of the sheave being provided with the projecting lugs *f f*, with which the sliding dogs *o o′* engage to prevent the turning of the sheave from right to left in Fig. 1, when the load is being elevated or conveyed along the track. As will be seen from an examination of Fig. 5, the lower ends of the dogs are rounded or beveled, and a corresponding bevel or inclination is given to the sides of the lugs *f f*, so that as the sheave revolves the dogs will be moved upward by the lugs, falling again by gravity, so as to interpose their points in the path of the revolution of the lugs. The lugs are so arranged on the edges of the sheave that while one of the dogs is rising the other is falling. The lugs on one side of the sheave are placed opposite the space which intervenes between the lugs on the other side. In this way the sheave E is prevented from turning backward, or from right to left in Fig. 1. The binding-pulley F is provided with a peripheral groove for the draft-rope, and is arranged to revolve freely on the stud *e*, which passes through the clevis *g* and the binding-frame L and connects these parts together. The binding-frame L is pivoted on the bolt *n* passing through the side frames, B B′, and sustains the binding-pulley in position, so that it may swing up and down between the frames to and from the carrying-sheave E, as indicated by the full and dotted lines in the figures. The clevis *g* is provided at its lower end with the hook K or other means for the attachment of the end of the rope D thereto, so that a portion of the weight of the load is carried by the binding-pulley. The binding-pulley is narrower than the carrying-sheave E, so that its edges may enter between the flanges on the latter, and the rope be clamped or bound between them when the binding-pulley is in the lowest position. The sliding dogs *o o′* are arranged to move up and down in suitable grooves in the side frames, and are provided at their upper ends with the projecting pins *p p′*, which extend over the beveled arms *s s′* of the sliding cam P, which is constructed to travel along in suitable ways or guides in the side frames, for the purpose of raising the dogs *o o′* or allowing them to fall, being moved in one direction, from right to left in Fig. 14, by the friction of the revolving binding-pulley, and in the other by contact with the lower end of the catch-pin G.

The shape of the sliding cam will be understood from an examination of Figs. 8, 10, 11, and 14. It consists, essentially, of a transverse body, *a′*, Fig. 10, the two parallel arms *s s′*, the upper surfaces of which are beveled or inclined to operate the sliding dogs *o o′*, the lug or projection *r*, which strikes against the catch-pin G, the downward projection *b′*, Figs. 4, 8, and 11, which acts as a friction-surface to receive motion from the revolving binding-pulley F, and the arms *u u′*, which at certain times engage with the lugs *d″ d″* on the binding-frame L, as represented in Fig. 14. The sliding cam is arranged to slide backward and forward in suitable ways or guides, *c′*, Fig. 17, in the side frames. The lug *r* projects inward from the body of the sliding cam, its end being adapted to strike against the catch-pin, and to thereby force the sliding cam from left to right in Fig. 1, when the carrier returns to receive a fresh load. The arms *u u′* extend downward and outward on each side of the body *a′*, in such position that the arms *h h* of the binding-frame can pass in between them, and allow the projecting lugs *d″ d″* to rest on the upper surfaces of the arms *u u′* in a certain position of the parts. The lug *b′* extends downward from the body *a′*, its lower surface being rounded and adapted to come in contact with the curved surface of the groove in the binding-pulley F, so that the cam may receive motion therefrom. (See Figs. 8 and 11.) The arm *t* reaches outward from the body of the sliding cam, between the arms *u u′*, its upper surface being preferably recessed, as shown in Figs. 10 and 16, to save weight, and its lower surface being curved or rounded and adapted to the shape of the groove in the binding-pulley F, so that when the pulley is elevated, as indicated by the dotted circles in Figs. 4 and 7, it may act as a stop to prevent the accidental movement of the sliding cam, which would throw the dogs *o o′* out of engagement with the lugs *f f* on the main carrying-sheave E. The dogs *o o′* are arranged to slide up and down, to and from the main carrying-sheave, in suitable guides or ways, *h′*, Figs. 17 and 18, in the side frames. The lugs *j*, Fig. 1, projecting outward on each side from the frame, serve as guides for the rods *q q* of the trip-frame. The trip-bar O is preferably provided with an inclined surface, *e′*, which prevents it from jamming against the lower end of the catch-pin G. The stop-block *m* is beveled on its upper surface toward the outside, so that when the carrier returns the catch-pin G will be forced to rise

p over it. The stop-block *m* may be held in lace by the bolt *c* passing through it; but I refer to construct it as shown in Figs. 4, 19. nd 20, with a notched flange, *q'*, and project- g lugs *r' r'*, which project into recesses *v'*, ig. 17, in the side frames. This construction cilitates the removal of the stop-block, when esired.

As indicated at *t'*, Figs. 4 and 17, the side ames are flanged or bent inward to hold the ope D on the carrying-sheave E.

It is obvious that the binding-pulley F may e made to slide up and down in grooves or uides in the side frames, the binding-frame eing dispensed with; but I prefer to employ he latter, as I thereby secure greater free- om of action among other advantages.

The operation of my improved hay-carrier s as follows: Supposing the hooks on the pul- ey-blocks J J' to be engaged with the slings which underlie the load which it is desired to levate and transfer to a different location, he parts of the apparatus will occupy the po- itions shown by the full lines in Fig. 14, and ny strain applied to the draft-rope D will traighten the rope and raise up the binding- pulley F and frame I, lifting the lugs *d' d''* from the arms *u u'* and bringing the surface of he groove in the binding-pulley against the ower side of the lug *b'* on the sliding cam P, (see Fig. 11,) so that the latter is moved by he friction of the revolving binding-pulley oward the left hand in Fig. 14, thereby al- owing the dogs *o o'* to fall, so that their points an engage with the lugs *f f* on the main car- rying-sheave E. The load is now lifted by he continued movement of the rope D, the heave E revolving and the lugs *f f* on it causing the sliding dogs to rise and fall as hey pass under the lower ends. The bind- ing-pulley F also revolves as the rope travels long beneath it, and the sliding cam P is pre- vented from accidentally sliding back to its original position by the binding-pulley com- ing in contact with the curved lower surface of the projecting arm *t*. The load continues to rise until one of the pulley-blocks J J' comes in contact with the plate N at the lower end of the trip-frame, and raises it up, as indicated by the dotted lines in Fig. 1, which move- ment is transmitted by the rods *q q* to the trip-bar O, which rises and forces the catch- pin G upward until the stop-block *m* can pass underneath it, thereby releasing the carrier, so that it may travel along toward the right hand in Fig. 1. When the load has arrived over the point where it is desired to deposit it, it is released from the sling or the fork by any ordinary device in use for this purpose, operated by a cord, if necessary. The car is now returned to its first position by means of the return-cord M, and, at the end of its return movement the lug *r* on the sliding cam P strikes against the lower end of the catch-pin G, and the cam is thereby caused to slide toward the right, thus leaving the parts in the position shown in Fig. 14, ready for a repetition of the operation. When the carrier returns, the catch-pin G is caused to slide upward by the inclined surface of the stop-block *m*. (See Fig. 4.) My improved hay-carrier is so constructed that it will sus- tain the load at any point in its elevation. Thus in case of an intentional or accidental release of the strain on the draft-rope, the bind- ing-pulley F will settle down to the position shown by the full lines in Fig. 1, thereby binding the rope firmly against the surface of the carrying-sheave E and preventing the rope from slipping along around the said sheave. The sheave is prevented from turn- ing backward by the dogs *o o'* engaging with the lugs *f f* on its edges; but the draft-rope might, under heavy strain, slip around it, were it not bound by the pressure against it of the pulley F, produced by that portion of the weight of the load which is sustained by the binding-pulley.

If it is desired to stop the elevation of the load at any point short of that at which the pulley-block comes in contact with the trip- frame, the catch-pin G may be raised, so as to allow the carrier to travel along the track- beam, by means of the cord *a* and lever H, Fig. 1. The cord *a* passes over a suitable pulley, and thence downward within reach of the operator. By pulling on the cord the lever H and catch-pin G are raised, as shown by the dotted lines in Fig. 1, so that the carrier can move along the track-beam and transfer the load to the desired place of deposit. The end of the lever H is guided in a suitable slot- ted standard, I, attached to the track-beam. The upper end of the catch-pin is arranged to slide through the lever, so as to be capable of independent action when necessary. A pin, *b*, or nut on the upper end of the catch-pin causes the latter to move upward when the lever is raised.

A rope is attached to the sling or fork, so that it can be drawn down at the end of the return movement of the carrier. In order to prevent the binding-pulley at this time from binding on the draft-rope, so as to prevent its passing backward around the sheave E, I ap- ply to the bent arm *h h* of the binding-frame L the projecting lugs *d' d''*, which engage with and bear on the upper edges of the arms *u u'* of the sliding cam P, so as to sustain the bind- ing-pulley in an elevated position, as repre- sented in Fig. 14, and to prevent the draft- rope from being clamped between the bind- ing pulley and the sheave E. In case at the end of the return movement of the carrier the binding pulley and frame are in one of their lower positions, as indicated in the full lines in Fig. 1, the ends of the arms *u u'* on the sliding cam, when the latter is forced back by contact with the catch-pin G, press against the lugs *d' d''* on the binding-frame (see Fig. 15) and cause the latter to swing upward until the arms can pass under them, thereby elevating the binding-pulley and keeping it in an ele- vated position until the draft-rope is again

straightened by the strain caused by elevating the load.

In a modified form of construction I have arranged the sliding cam P to be operated by the return-rope M, or by a separate rope, instead of by the friction of the binding-pulley against the lower surface of the lug *b'*; but I prefer to employ the automatic arrangement herein described.

In another modification of my improved hay-carrier I have provided the binding-pulley with lugs, like *f*, on the main carrying-sheave, or with ratchet-teeth, and have arranged a series of sliding dogs or pawls on the binding-frame L, to engage with the lugs or teeth to prevent the reverse rotation of the binding-pulley, the said lugs or teeth being operated by the sliding cam, so as to be thrown out of action when the cam is forced to the right in Fig. 1. This arrangement may be employed either with or without means for arresting the reverse movement of the main carrying-sheave E.

I do not claim herein anything which has been shown and described in my previous patent.

I claim—

1. The combination, with the traveling frame B B, of the carrier-sheave E, swinging binding-pulley F, attached to the end of the swinging binding-frame L, pivoted to the frame of the machine, so that the binding-pulley can swing between the frames B B, and the draft-rope D, attached at one end to the binding-frame, substantially as described.

2. The combination, with the traveling frame B B, of the carrier-sheave E, provided with lugs *f f*, swinging binding-pulley F, attached to the end of the swinging binding-frame L, pivoted to the frame of the machine, so that the binding-pulley can swing between the frames B B, draft-rope D, attached at one end to the binding-frame, and the sliding dog *o*, substantially as described.

3. The combination, in a hay-carrier, of the main carrying-sheave E, provided with lugs, binding-pulley F, frame L, dog *o*, and sliding cam P, substantially as described.

4. The combination, in a hay-carrier, of the main carrying-sheave E, provided with lugs, movable binding-pulley F, dog *o*, and sliding cam P, provided with lug *b'*, arranged to operate the cam by the friction of the binding-pulley, substantially as described.

5. The combination, in a hay-carrier, of the main carrying-sheave E, provided with lugs, binding-pulley F, supported on pivoted binding-frame L, dog *o*, and sliding cam P, provided with lug *b'*, arranged to operate the cam by the friction of the binding-pulley, substantially as described.

6. The combination, in a hay-carrier, of the main carrying-sheave E, binding-pulley F, pivoted binding-frame L, having one or more lugs *d''*, and the sliding cam P, having one or more arms, *u*, adapted to engage with the said lug or lugs to sustain the binding-pulley, substantially as and for the purposes set forth.

7. The combination, in a hay-carrier, of the main carrying-sheave E, having alternately arranged lugs *f f*, binding-pulley F, pivoted frame L, provided with projections *d' d''*, dog *o o'*, and sliding cam P, provided with beveled arms *s s'*, arms *u u'*, and lug *b'*, arranged to operate substantially as and for the purposes set forth.

8. The combination, in a hay-carrier, of the main carrying-sheave E, having alternately arranged lugs *f f*, binding-pulley F, pivoted frame L, provided with projections *d' d''*, dog *o o'*, sliding cam P, provided with beveled arms *s s'*, arms *u u'*, and lug *b'*, and the track-beam A and catch-pin G, arranged to operate substantially as and for the purposes set forth.

WENTWORTH G. RICKER.

Witnesses:

GEO. B. SELDEN,

H. G. PHILLIPS.

234

(No Model.)

5 Sheets—Sheet 1.

C. G. MAJOR.

LIFT OR HOIST.

No. 338,536. Patented Mar. 23, 1886.

Fig. 1.

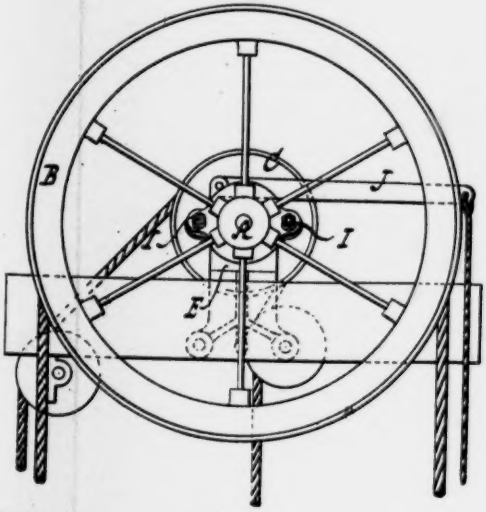


Fig. 2.

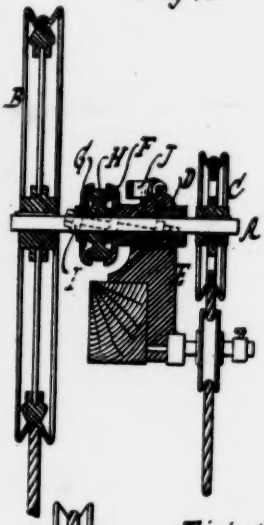


Fig. 3.

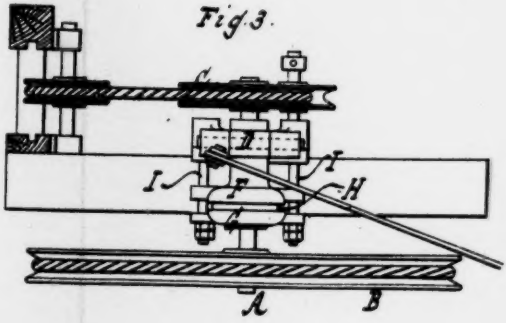
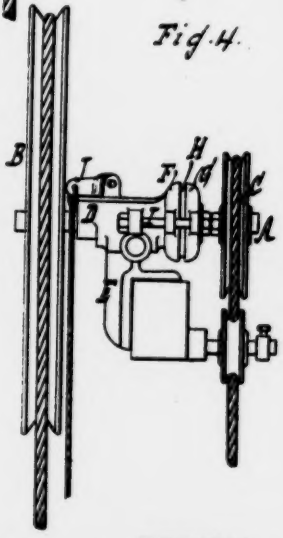


Fig. 4.



WITNESSES:

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INVENTOR

Charles George Major

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Van Santvoord & Hauff

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236

(No Model.) 5 Sheets—Sheet 2.

C. G. MAJOR.

LIFT OR HOIST.

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Fig. 5.

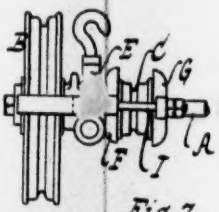


Fig. 6.

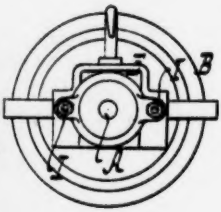


Fig. 10.

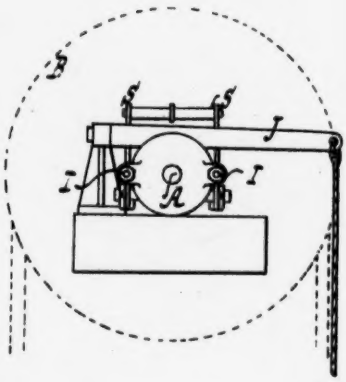


Fig. 7.

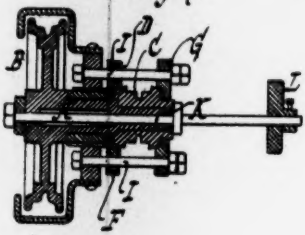


Fig. 8.

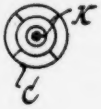
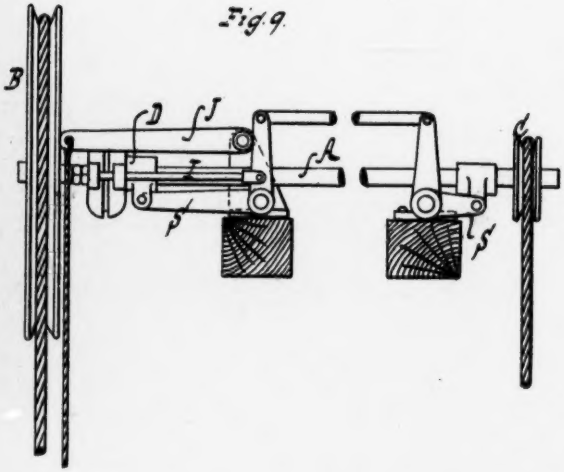


Fig. 9.



WITNESSES:

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INVENTOR

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ATTORNEYS

238

(No Model.)

5 Sheets—Sheet 3.

C. G. MAJOR.

LIFT OR HOIST.

No. 338,536. Patented Mar. 23, 1886.

Fig 11.

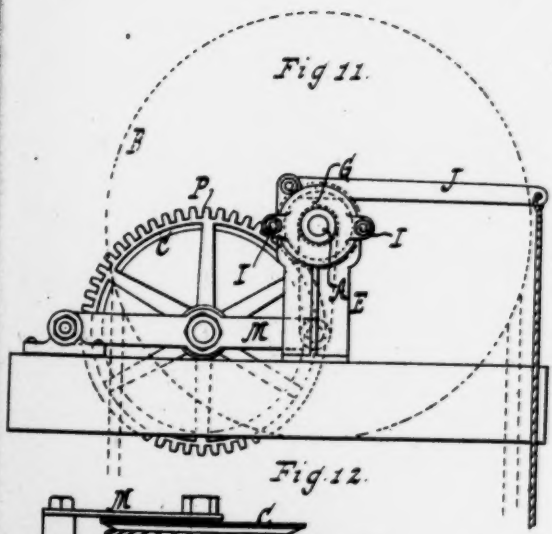
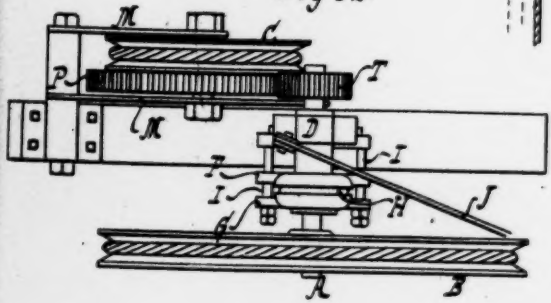


Fig. 12.



WITNESSES:

William Miller

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ATTORNEYS

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(No Model.)

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LIFT OR HOIST.

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Fig. 13.

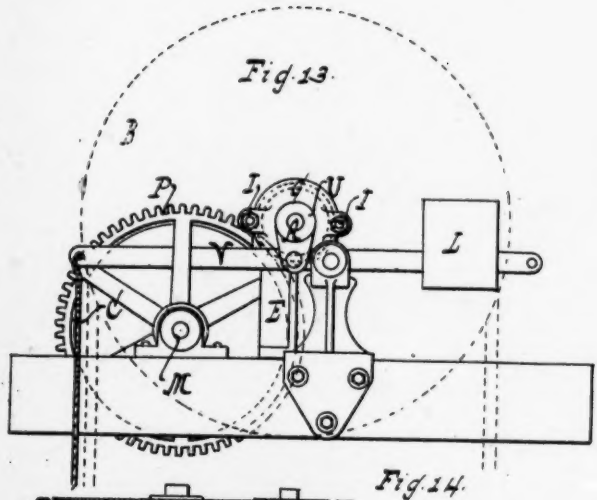
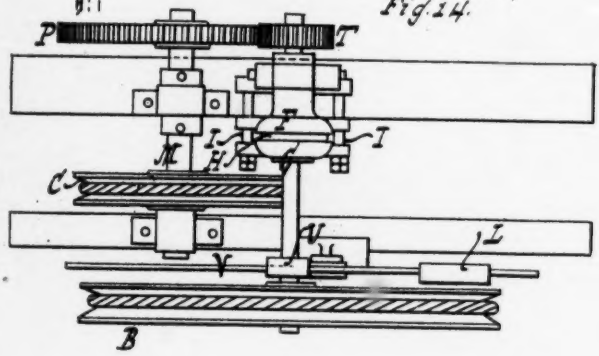


Fig. 14.



WITNESSES:

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(No Model.) 5 Sheets—Sheet

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C. G. MAJOR.

LIFT OR HOIST.

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Fig. 15.

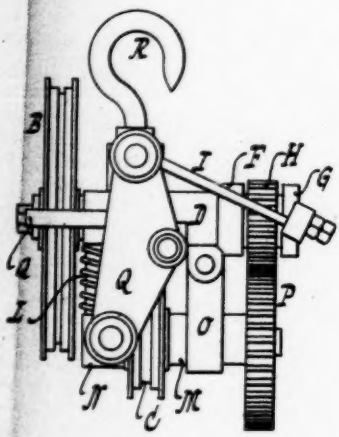


Fig. 16.

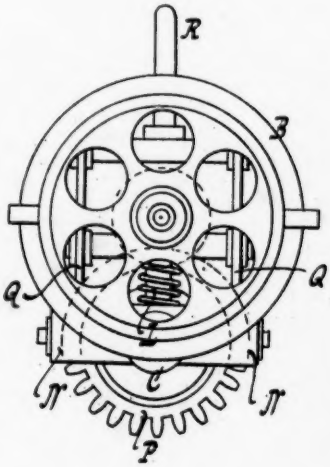


Fig. 18.

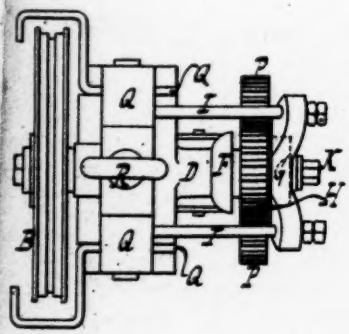
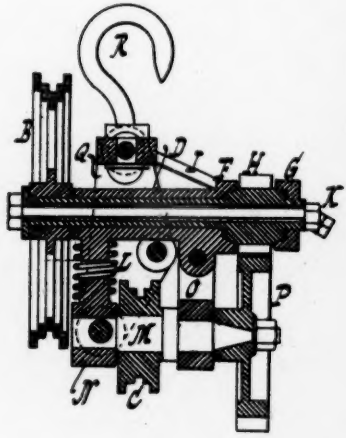


Fig. 17.



WITNESSES:

William A. Miller

A. Fisher der Franz Jr.

INVENTOR

Charles George Major

BY

Van Santvoord & Hamm

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ARLES GEORGE MAJOR, OF LONDON, ENGLAND, ASSIGNOR OF ONE-HALF TO JOHN DREW, OF SAME PLACE.

LIFT OR HOIST.

SPECIFICATION forming part of Letters Patent No. 338,536, dated March 23, 1886.

Application filed December 10, 1885. Serial No. 185,264. (No model.) Patented in England February 24, 1885, No. 2,482.

all whom it may concern:

Be it known that I, CHARLES GEORGE AJOR, a subject of the Queen of Great Brit- and Ireland, and a resident of London, gland, have invented certain Improvements Lifts, Hoists, and Pulley-Blocks, (for which have obtained a British patent, No. 2,482, ted February 24, 1885,) of which the follow- is a specification.

My invention relates particularly to that ss of lifting machinery known as "self-sus- ining," in which an automatic brake comes nto operation by means of the pull exerted y the load, and is thrown out of operation y the application of motive power at the riving end of the mechanism.

The object of my invention is, first, to pro- uce an automatic brake apparatus which hall be effectual in either direction—*i. e.*, whether the load tends to set the machine in motion in one direction or the opposite; sec- ond, which shall at the same time be free from the jerks and irregular motion common to many previous forms of self-sustaining brakes, which shall always be free to receive motion in either direction at the driving end of the mechanism, the brake being automatically thrown out of action; third, which shall be so arranged that the brake may be thrown out of action by means of a lever, leaving the mech- anism free to revolve in either direction under the influence of the load and without apply- ing further motive power. I attain these ob- jects by the mechanism illustrated in the ac- companying drawings, in which—

Figure 1 is a front view of the lift, hoist, or pulley-block. Fig. 2 is a sectional elevation of the same; Fig. 3, a plan view of the same; Fig. 4, a side view of the same, showing the friction-flanges. Fig. 5 is a simple portable form of self-sustaining hoist; Fig. 6, a side view of same; Fig. 7, a sectional view of same. Fig. 8 is the shoulder notched as for a coup- ling. Fig. 9 is a side view of a fixed hoist with long shaft having a bearing at each end; Fig. 10, a front view of the same; Fig. 11, a front elevation of a double-purchase lift or hoist, with power increased by means of toothed wheels; Fig. 12, a plan view of the same; Fig. 13, a front elevation of a simple form of double-purchase arrangement, in which the mechan- ism turns in one direction only; Fig. 14, a plan view of the same; Fig. 15, a side eleva- tion of portable hoist for heavy loads; Fig. 16, a front elevation of the same; Fig. 17, a sectional elevation of the same; Fig. 18, a plan view of the same.

Similar letters refer to similar parts through- out the several views.

A shaft, A, (see Figs. 1, 2, and 3,) has se- cured to it at one end a large wheel, B, suit- ably formed for the reception of a driving rope or chain, or to receive motion from any other medium, and at the other end a smaller grooved or other wheel, C, is secured, over which is passed the rope or chain for suspend- ing the load. The shaft A is carried in one long bearing, D, placed between the wheels B and C, and mounted upon a bracket, E, in such a manner as to allow a small amount of oscil- lation of the bearing and shaft. One end of the long bearing D terminates in a flange or mouth, F, of relatively large diameter, suit- ably turned (machined) to form one cheek of a friction-clutch. A similar flange, G, is mounted loosely on the shaft A, with its face toward the bearing. Between the two flanges a third and double-faced flange, H, is placed, and is secured to the shaft. The loose flange G is provided with bosses or lugs at the side, from which two bolts, I I, are carried in an inclined direction to two corresponding lugs upon the fixed bracket E. These bolts are adjustable as to length and provided with lock-nuts. They pass through another pair of lugs placed on the side of the enlarged end of bearing D. A limited amount of play is provided in all the lugs. The bolts are ad- justed to such a length as will just allow the center flange, H, to run freely.

The action is as follows: The weight of the load or of the lift-cage and balance-weight de- flects that end of the shaft from which it is suspended, and the arrangement of bolts I I is such that they draw the loose flanges G, the center flange, H, and the enlarged end of the bearing F into contact and with considerable force. The bearing D cannot revolve, the outer flange, G, cannot revolve, and the flange H is gripped between them with sufficient force

to prevent it from revolving, and the whole machine is therefore held fast. The greater the load the more tightly are the frictional surfaces forced into contact. On the other hand, when the hand or driving rope (or chain) is pulled in a downward direction, that end of the shaft is deflected, and as this tends to straighten the links or bolts I I the friction-flanges are released sufficiently to allow the machine to revolve. This action takes place quite irrespectively of the direction in which the machine is to be worked. So long as the hand-rope is pulled the machine is free, but immediately it is released the weight of the load reapplies the brake.

For lowering quickly by the brake I mount a lever, J, on the fixed bracket E, or in any other suitable position, so that by depressing one end of the lever it may be made to raise the end of bearing D nearest the load, or depress the opposite end, thus releasing the brake to any desired extent. Liberation of the lever J allows the brake to go on again. A cord may be carried down from the lever through several floors to give control at all levels.

The friction-flanges F G H may be placed at the opposite end of bearing D, (see Fig. 4,) the only difference being that the links I I must then be inclined downward toward the loose flange G, instead of upward. The same results are obtained if the links I I are placed horizontally and parallel with the shaft and the center of oscillation placed either above or below the center line of shaft, as in Fig. 4.

By mounting the hereinbefore-described arrangement in a light suspending frame (see Figs. 5, 6, 7, and 8) I construct a simple portable form of self-sustaining hoist. In this arrangement the hand-wheel B is made in one piece with a long sleeve A, which takes the place of the shaft. The load-wheel C is mounted on this sleeve and held tightly up to a shoulder by means of the bolt K. The shoulder is notched, as for a coupling, (see Fig. 8,) and the two wheels are thus locked together. In this hoist, as there is no permanent weight of cage and balance to counteract the downward pull of the hand-chain, the latter would, owing to its greater distance from the center of suspension, overbalance the load-chain and hold the brake off. If a load were then attached, the machine would revolve in preference to depressing the load end of the apparatus. It is therefore requisite that the brake should be normally on independently of the load, the latter only intensifying the action. For this purpose I extend the bolt K and place upon it a weight, L, sufficient to overbalance the weight of hand-wheel B and its chain.

If a portable hoist of the last-described form were made for heavy loads, the hand-wheel B would be inconveniently large, and for the purpose of releasing the brake its distance from the point of suspension would be so great as to be impracticable. I reduce the size of the wheel and bring back the and load wheels close to the point of sion in the arrangement shown in Fi 16, 17, and 18. The hand-wheel B is s to a hollow sleeve, A, formed in one with the toothed pinion H. The sleeve through an oscillating bearing, D, fitte the flanges F and G and tie-bolts I I, fore. The pinion H takes the place fixed flange H of previous figures. A shaft, M, is carried at one end in a swi bearing, N, and at the other end in a be O, which is linked up to bearing D, so oscillations of the latter must be in part mitted to shaft M. Secured to shaft M toothed wheel, P, gearing with pinion H also the load-wheel C. A small spring placed beneath one end of bearing D, to teract the weight of the wheel B and its and so keep the brake on. The two lating bearings are carried in side frame suspended from a hook, R. The action is lar to that previously described. The d ward pull of load on wheel C depresses end of shaft M, pulls with it the clutch bearing D, and tightens up the friction-fla onto the pinion H. A pull on the hand-c has the opposite effect and releases the pi H. A lever action, as already describe sometimes added. The centers of oscilla are proportioned relatively to the gearing that the ratio of oscillating leverage is slig in excess of the ratio of gearing, and the lease of the brake takes place therefore a lighter pull than that necessary to lift load.

In some cases of fixed hoists it is desir to place the hand-wheel at some dista from the load-wheel, leading to the use long shaft, for which a single bearing wo be quite unsuitable. In Figs. 9 and 1 place a bearing at each end, carrying e bearing upon the horizontal arm of a b crank, S S, the other arm of each bell-cr standing vertically upward. These verti arms are tied together in any suitable wa for instance, by a light rod, cord, or chain. deflection of one end of the shaft will then ca the elevation of the other, and vice ver Either of the bearings may have the friction clutch arrangement, as previously describ save that the links or bolts I I are carried the vertical arm of the bell-crank, instead to the supporting-bracket. The action is all other respects the same as in Figs. 1, 2, and 4.

In double-purchase lifts and hoists, wi power increased by means of toothed whee I apply my invention as follows: I take a sha A, Figs. 11 and 12, with hand-wheel B, o central bearing, D, and friction-clutch arrang ment F G H, all as first described; but t load-wheel is replaced by a pinion, T. T load-wheel C is secured to a toothed wheel, which gears with the pinion T. T tw wheels C and P run loosely on a pin between two parallel bars, M, which

he wheels. These bars are secured to-
, and are at one end pivoted to the frame
machine, or to any convenient fixed
while at the other end they are jointed
t end of bearing D next the pinion T.
of the weight of the load (or any other
ortion desired) is thus brought to bear
the pinion end of shaft A, with results
eviously described. It is obvious that a
of toothed wheels in any number of steps
archases may be similarly mounted be-
n the swinging bars M, giving any amount
fting-power, and still transferring to shaft
fficient of the load to put the brake on.
the case of a double-purchase arrange-
t, in which the load is always lifted by
ing the mechanism in one direction only,
rry out my invention in a more simple
n. (See Figs. 13 and 14.) The load-wheel
together with its toothed wheel P, are se-
red to a shaft, M, which revolves in ordi-
y fixed bearings secured to the frame. The
ft A is fitted at its front end with an addi-
nal bearing, U, mounted upon a lever, V. On
elever a weight, L, is placed for the purpose
counterbalancing the weight of wheel B and
hand-rope. By sliding the weights along
e lever its effect may be adjusted to suit va-
ing weights of rope. The weight is some-
mes replaced by a spring. When raising or
wering the load by means of the wheel B,
e brake is automatically released, as before
scribed; but if the load tends of itself to run
own, the toothed wheel P becomes the driver,
d, transmitting its motion to the teeth of the
inion T upon the shaft A by a downward
ressure, puts on the brake by depressing that
nd of the shaft, as before, and to a degree pro-
portionate to the load. This arrangement is
lso applicable to a train of any number of
shafts and toothed wheels. The lever V is ex-
tended in both directions, and a cord attached
to the weighted end enables the attendant to
increase the brake-power by hand for emergen-
cies, while a cord at the other end, if pulled,
will release the brake and lower the load.

The devices as described are applicable to all kinds of lifting machinery in which the lifting mechanism is actuated by belts, cords, ropes, or chains, and which can be so arranged that the stress produced by the driving medium on any one shaft shall have the effect of opposing and overcoming the stress produced by the load upon that shaft, and so lead to its oscillation, as described. The stresses may act in any direction, and are not confined to the vertical.

Having now fully described my invention, I would have it understood that I do not confine myself to the precise details described and illustrated, as these may be modified in various ways without departing from the substance of the invention. I do not claim self-sustaining lifts, as such, but do claim the following as points of novelty:

1. The arrangement of single-spindle lifting apparatus with oscillating bearing, combined with the automatic friction-brake, as described, and shown in Figs. 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

2. In a lifting apparatus, the combination of the automatic brake actuated by links, as described, and shown in all the figures, with any oscillating shaft.

3. In a lifting apparatus, the combination of an oscillating shaft, an automatic friction-brake, as described, and a lever, V, for the purpose of releasing the brake, as described, and shown in Figs. 1, 2, 3, 4, 9, 10, 11, 12, 13, and 14.

4. The portable forms of lifting apparatus with automatic brake, as described, and shown in Figs. 5, 6, 7, 8, 15, 16, 17, and 18.

5. The arrangement of lifting apparatus with one long shaft and two bearings mounted in bell-cranks linked together, combined with an automatic friction clutch-brake, as described, and shown in Figs. 9 and 10.

6. The arrangement of lifting apparatus with increased power by means of toothed wheels and extra shafts, in which the load-wheel is carried in a pivoted frame, partly supported by one end of the motive-power shaft, combined with automatic friction clutch-brake, as described, and shown in Figs. 11 and 12.

7. The arrangement of lifting apparatus with increased power by means of toothed wheels and extra shafts, in which the downward effort of the load is transmitted to the driving-shaft through the teeth of the wheels only, combined with the automatic friction-brake, as described, and shown in Figs. 13 and 14.

8. The combination of the automatic friction-brake and oscillating shaft with an adjustable weight, as described, and shown in Figs. 5, 6, 7, 8, 13, and 14.

CHARLES GEORGE MAJOR.

Witnesses:
WM. S. NELSON,
A. STEAD,
Both of 46 *Lombard Street, London, Clerks.*

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(No Model.)

248

L. D. SPRAGG.

HOISTING DEVICE.

No. 349,538.

Patented Sept. 21, 1886.

Fig. 1.

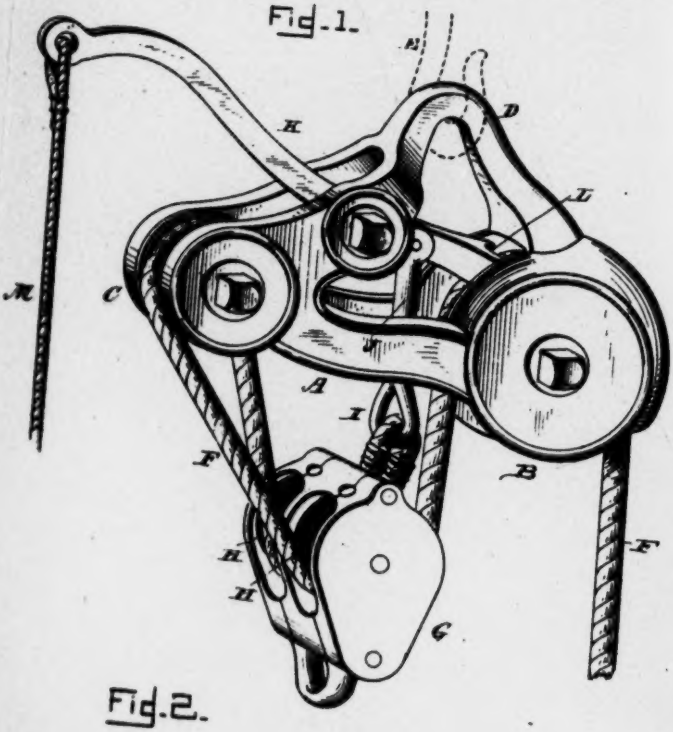
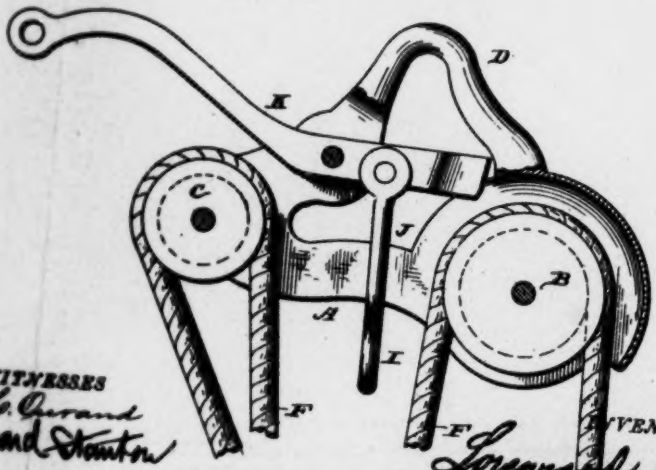


Fig. 2.



WITNESSES
H. C. Durand
Edward Stanton

INVENTOR
Lorenzo D. Spragg
By Louis Bagger & Co.
Attorneys

UNITED STATES PATENT OFFICE.

LORENZO D. SPRAGG, OF MARION, OHIO.

HOISTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 349,538, dated September 21, 1886.

Application filed March 2, 1886. Serial No. 193,746. (No model.)

To whom it may concern:

Be it known that I, LORENZO D. SPRAGG, a citizen of the United States, and a resident of Marion, in the county of Marion and State of Ohio, have invented certain new and useful Improvements in Hoisting Devices; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable other skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved hoisting apparatus, showing it in operation; and Fig. 2 is a side view of the same, having one-half of the upper frame removed. Similar letters of reference indicate corresponding parts in both the figures.

My invention has relation to hoisting apparatus; and it consists in the improved construction and combination of parts of an apparatus in which the weight of the object being hoisted will cause a clamping-lever or brake to descend upon the hoisting-rope and clamp it when the hoisting-rope is not pulled, and in which the weight of the object being hoisted will draw upon the hoisting-rope against the end of the clamping-lever, forcing it down against the rope, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates a frame, having two pulleys, B and C, journaled in its two ends, and having a bail or loop, D, at its upper end, into which a fastening-hook, E, or other means of fastening to the frame, may be inserted.

The hoisting-rope F passes over the pulleys in the frame and over the loose pulley-block G, which is provided with two sheaves, H H, the hoisting portion of the rope depending from the pulley B over the outer side of the frame, the rope passing from the inner edge of this pulley down under one sheave of the loose block thereupon over the other pulley or sheave in the frame, and again under the other sheave in the loose block, whereupon the end is secured to an eye, I, at the lower end of a rod, J, pivoted to the inner arm of the brake-lever K, which is pivoted between the sides of the frame, in the upper portion of the same.

The inner end of the brake-lever or clamping-lever has a round notch or recess, L, enabling it to bear around the side of the hoisting-rope, the said end bearing against the portion of the rope which passes over the upper and inner portion of the periphery of the sheave B, and the outer end of the outer arm of the lever has a rope, M, secured to it, by means of which rope the inner end of the lever may be raised.

When hoisting, the outer arm of the lever is drawn down by means of the rope attached to it, allowing the hoisting-rope to pass freely over the sheaves, and the rope, passing upward over the upper and inner portion of the periphery of the sheave, will naturally raise the clamping inner end of the lever against the weight of the object being hoisted; but when the hoisting is stopped and the rope of the lever released the inner end of the lever will be drawn down upon the hoisting-rope and clamp it, preventing it from passing back over the pulley, and consequently preventing the object being raised from being lowered, and the strain upon the rope against the recessed point of the lever will furthermore serve to draw the clamping-lever down upon the rope.

When the object is to be lowered, the clamping-lever must be released, and may be held ready to descend upon the rope if the object descends with too much velocity, stopping the descent.

In this manner it will be seen that this apparatus will prevent any accident from happening in allowing the hoisting-rope to go while an object is being hoisted, as the weight of the object will immediately stop the descent of the object.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a hoisting device, the combination of a pulley or sheave, a loose pulley-block, a clamping-lever having its end bearing toward the upper edge of the pulley, and a hoisting-rope passing over the sheave and over the loose block, and secured by one end to that end of the clamping-lever nearest to said sheave, as and for the purpose shown and set forth.

2. In a hoisting device, the combination of a frame having means for suspending it, and

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having two pulleys or sheaves journaled in its ends, a loose pulley-block, a lever pivoted in the frame and having its end recessed and projecting toward the upper and inner portion of one of the sheaves in the frame, and provided with a pending eyed rod, and a hoisting-rope secured to the pending eyed rod and passed under one sheave of the loose block and over one sheave of the frame, and again under a sheave of the block and over the other sheave of the frame having the end of the lever bearing against it, as and for the purpose shown and set forth.

3. In a hoisting apparatus, the combination of a frame having means for suspending it, and having two pulleys or sheaves journaled in its ends, a loose pulley-block, a lever pivoted in the frame, and having its inner end rec and projecting toward the upper and i portion of one of the sheaves, and provi with a pending eyed rod, and having a r attached to its outer end, and a hoisting-r secured to the eyed rod and reeved over sheaves in the frame and under the sheave the block, and having the inner end of the ver bearing against it, as and for the purp shown and set forth.

In testimony that I claim the foregoing as own I have hereunto affixed my signature presence of two witnesses.

LORENZO D. SPRAGG

Witnesses:
J. Q. CODDING,
H. M. AULT.

252

(No Model.)

C. F. BATT.

2 Sheets—Sheet 1.

HOISTING TACKLE.

No. 395,113.

Patented Dec. 25, 1888.

Fig. 1.

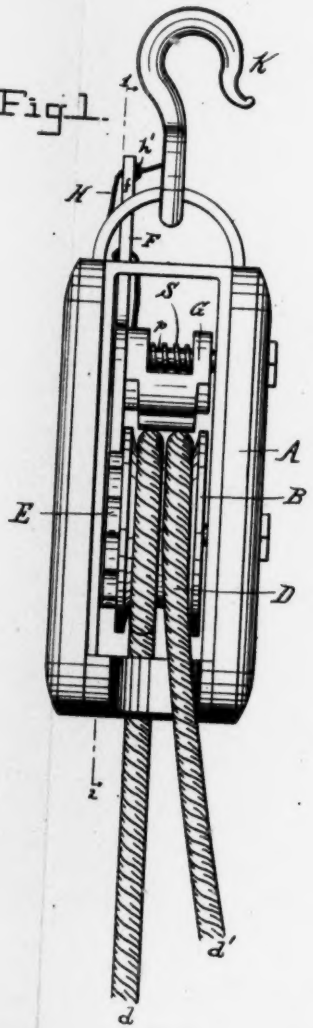
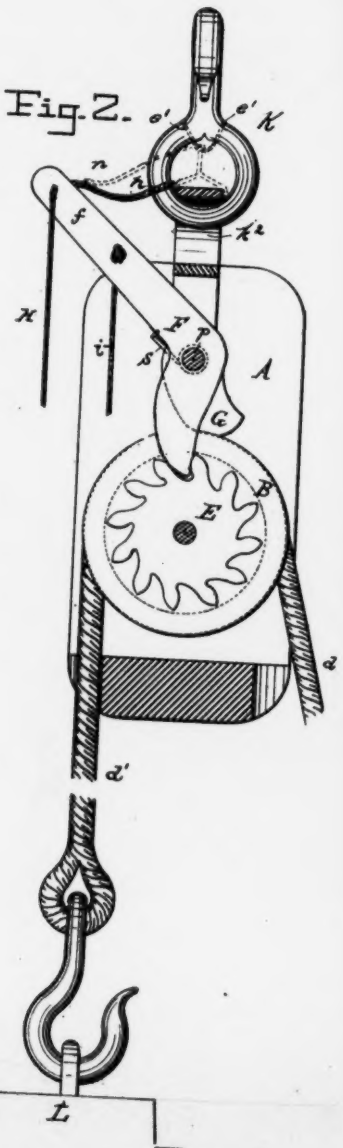


Fig. 2.



Witnesses:
C. J. Cruwell
Geo. A. Crane.

Inventor:
Charles F. Batt,
By his Attorneys
Howson & Sell

(No Model.)

C. F. BATT.

2 Sheets—S

HOISTING TACKLE.

No. 395,113.

Patented Dec. 25, 18

Fig. 3.

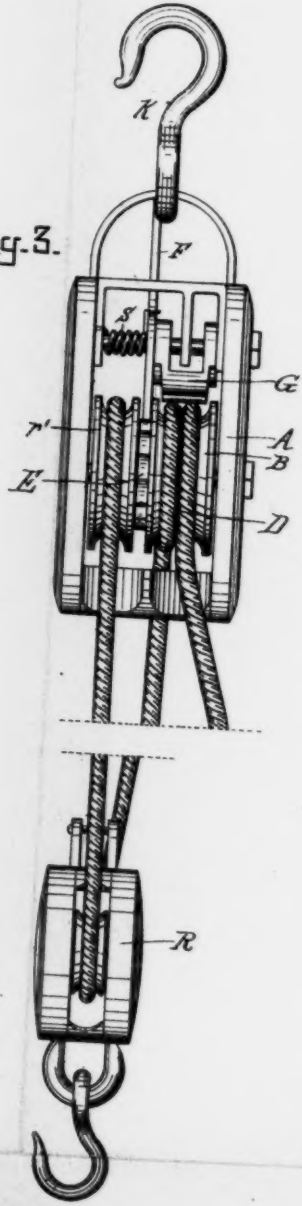
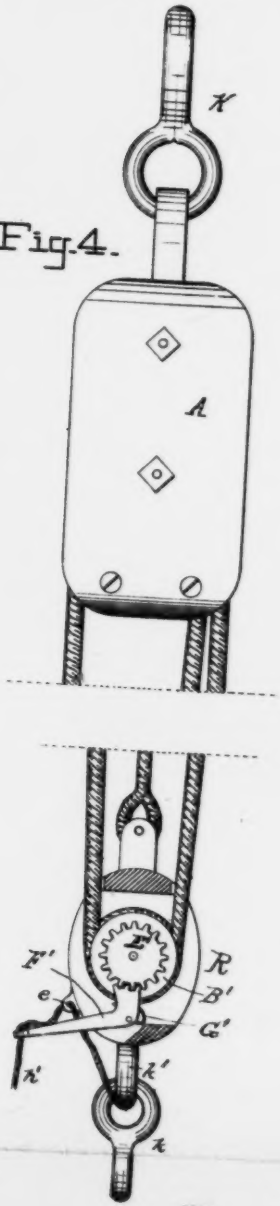


Fig. 4.



Witnesses:

E. J. Greenwold.

Geo. A. Crane.

Inventor:

Charles F. Batt

by his attorneys

Howson & Howson

NITED STATES PATENT OFFICE.

CHARLES F. BATT OF BROOKLYN, NEW YORK.

HOISTING-TACKLE.

ECIFICATION forming part of Letters Patent No. 395,113, dated December 25, 1888.

Application filed May 12, 1888. Serial No. 273,756. (No model.)

hom it may concern:

known that I, CHARLES F. BATT, a of the United States, and a resident of n, New York, have invented an Im- Hoisting-Tackle, of which the follow- specification.

object of my invention is to so con- a pulley-block or hoisting-tackle that l may be locked or held in any posi- d so that the descent of the load may ly controlled as circumstances may re-

e accompanying drawings, Figure 1 is view of a single-pulley hoisting-block ying my invention. Fig. 2 is a vertical of the same on the line 1 2, Fig. 1. is a view of a double-pulley block em- g my invention in connection with a g block; and Fig. 4 is a view of a modi- n, and showing the application of my vement to the running block.

Figs. 1 and 2 I have illustrated my in- n as applied in one of its simplest forms lock, A, with a single pulley, B, around the hoisting-rope D is passed with a e turn, although the number of turns e increased. One end, *d*, of this rope free hoisting end, while from the other ', is suspended the load L, Fig. 2. The y-block is provided with the usual sus- on-hook, K.

e main feature of my invention consists constructing the pulley that the load e locked at any desired height, and may wered easily and slowly or as fast as may sired, and the rope freely manipulated the load is off. For this purpose a lock he pulley and a brake for the rope are bined, as hereinafter described.

e means I prefer to employ for locking ulley is in the form of a lever to engage the pulley, which has teeth E for the ose. I have shown these teeth as in the of a wheel in one with or attached to ; but the manner of providing the with teeth is only a detail. The lock- ver F is pivoted to the block at any ole point. In the present instance I shown the locking-lever as pivoted on a -spindle, *p*, in the block. This lever is so tructed that the pulley is free to turn in the direction taken by the rope in hoisting the load; but it locks the pulley when the rope is allowed to travel in the opposite direction, unless the free end of the lever is so acted upon as to hold the lever out of engagement with the toothed wheel. I make in one piece with this locking-lever or secure to it a cam-brake, G, the acting face of which is adapted to bear on the turns of rope upon the pulley B, as represented in Fig. 1. In the present instance the locking-lever is rigidly secured to the brake. A spring, S, is arranged to act upon the lever and brake, so as to tend to press the locking-lever into gear with the wheel. In the present instance I have shown the spring as a coiled spring around the spindle *p* and fastened at one end to the spindle and acting at the other end upon an arm, *f*, of the locking-lever.

To an arm, *f*, on the locking-lever is connected an operating chain or cord, H, which is secured at *h* to the suspension-hook K, or it may be to a part of the block, and passes through an opening in an eye upon the arm *f* of the lever. A stop, *h'*, (which may be made by knotting the cord,) is formed upon or fixed to the cord to bear upon the lever at the back of the eye, as shown in Fig. 1, leaving a certain amount of slackness in the cord when the pulley is locked and the cam-brake bears with full effect upon the turns of the rope D. The amount of this slackness is just sufficient to permit the lever to be pulled by the cord H far enough to free the brake G from the rope D without, however, releasing the pulley B, with its toothed wheel, from the locking-lever. The end of the lever F has, however, free play upon the cord H below the knot when the lever is acted on either by the teeth of the wheel in hoisting the load or by power applied to the free end of the lever. To disengage the locking-lever another chain or cord, *i*, may be used, this cord being simply secured to the lever, so that by pulling the cord the lever may be moved far enough to be disengaged from the toothed wheel and leave the pulley free to turn. The chain or cord *i* is, however, not necessary if the lever is within convenient reach, and, indeed, the cord or chain H may be dispensed with, too, if preferred. The cord *i*, if used, is connected

to the lever near its fulcrum, so that sufficient power may not be obtained to accidentally unlock the pulley when the load is on.

It will be seen from the foregoing description that when it is desired the load may be locked at any desired height by simply releasing the tension on the hoisting end *d* of the rope. The pull of the load upon the other end of the rope tends to turn the pulley, so that the toothed wheel acts on the locking-lever F to press the brake forcibly upon the rope and prevent it from slipping on the pulley. The friction of the rope on the brake, when the latter comes into contact with the rope, also tends to increase the pressure on the latter, so that the heavier the load the tighter will be the grip of the brake. If, then, it is desired to let the load down slowly, the lever F may be pulled sufficiently far by means of the cord or chain H, or otherwise, to free the brake G, while the pulley remains locked, so that the rope D may slip on the stationary pulley under the strain of the load. In all cases I prefer to employ at least two turns of the rope upon the pulley, so as to get a sufficient frictional surface when the pulley is locked.

When it is desired to let the end *d'* of the rope down quickly, as when it is free from a load, the lever F is disengaged from the toothed wheel of the pulley by pulling the cord *i*, so that the latter is entirely free to turn. Although I have shown the operating-arm F, to which the operating-cord is connected, as being a part of the locking-lever, it will be understood from the foregoing description that that is not important, but that it is important to have a rigid connection between the operating-lever and the brake, in order that the brake may always be released from the rope before the pulley is released from the lock.

In Fig. 3 I have shown my invention as applied to a double-pulley block in connection with a runner, R, the only difference in this case being that there is an additional loose pulley, *r'*, on the suspended block A for the extra turn of the rope resulting from the use of the runner R. The blocks may be constructed for any desired number of turns of the rope.

In the modification, Fig. 4, I have shown my combined locking lever and brake applied to the runner R. In such case I make the pulley B' of the runner with a sufficiently wide groove to allow of two turns of the rope being taken around it, as in the construction Fig. 1. In this case the lever F' may be provided with the knotted operating-cord *h'*, which passes through an eye, *e*, on the block before reaching the eye on the lever F', and which is secured or looped to the suspending-hook *k* of the runner with sufficient slackness to permit the brake G' to be freed without freeing the locking-lever when the load is on; but when the load is taken off the suspending-hook can, by pulling on the cord *h'*, be lifted on its loop *k'* sufficiently to permi
to be freed from the toothed whe
case I have shown the locking-le
ing a number of teeth to engage t
the locking-wheel E.'

The arrangement of the operati
scribed with reference to Fig. 4 n
plied to the suspended pulley-bloc
dicated by dotted lines in Fig. 2.
eye, *e'*, is applied to the suspension-
through this loop or eye the cord
passed, as shown by dotted lines, a
to the loop k^2 of the pulley-bloc
when the load is on, the arm *f* of th
can be pulled down by the knotted
far enough to free the brake G. Whe
is off, the pull on the cord or chain
the pulley-block and rope sufficien
the lever free itself from the locking

Although I have described my i
hoisting-tackle only in connection
hoisting-tackle, it will be evident th
may be used instead of ropes.

I claim as my invention—

1. A hoisting-tackle comprising a
pulley-block having a pulley, with
fasten the pulley and a brake rigidly
to the lock to act on the rope.

2. A hoisting-tackle comprising a
a pulley-block having a pulley aroun
the rope has a double turn, with a
fasten the pulley and a brake rigidly
to the lock to act on the rope.

3. A hoisting-tackle comprising a
a pulley-block having a pulley provid
teeth, in combination with a locking-
lock the pulley and a brake rigidly
to the lever to act on the rope.

4. A hoisting-tackle comprising a
pulley-block having a pulley, a lockin
to lock the pulley and having an op
arm, and a brake rigidly secured to th
to act on the rope.

5. A hoisting-tackle comprising a
pulley-block having a pulley provide
teeth, in combination with a locking-
lock the pulley, a spring to press the
into engagement, and a brake rigidly
to the lever to act on the rope.

6. A hoisting-tackle comprising a
a pulley-block having a pulley with a
fasten the pulley, and a brake connec
the lock to act on the rope, and an ope
arm rigidly connected to the brake to
from the rope without releasing the pu

7. A hoisting-tackle comprising a
pulley-block having a pulley around
the rope has a double turn, a lock to
the pulley, a brake connected to the lo
act on the rope, and an operating-arm
connected to the brake to free it fro
rope without releasing it from the pull

8. A hoisting-tackle comprising a
a pulley-block having a pulley and
nected toothed wheel, with a locking-le
engage with the toothed wheel, the leve
ing an operating-arm to free it from the

a brake rigidly secured to the lever to act
he rope.

A hoisting-tackle comprising a rope and
ley-block having a pulley with locking-
th, a locking-lever to engage with the teeth,
perating-cord for the lever, and a brake
dly secured to the lever to act on the rope.

0. A hoisting-tackle comprising a rope and
alley-block having a pulley, a locking-lever
lock the pulley, a brake rigidly secured to
lever to act on the rope, and a cord connected to a part of the tackle and to the lever by a stop on the slack part of the cord, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES F. BATT.

Witnesses:
ALBERT POPKINS,
HUBERT HOWSON.

(No Model.)

260

J. T. BURR.

SELF LOCKING PULLEY.

No. 461,316.

Patented Oct. 13, 189

Fig. 1.

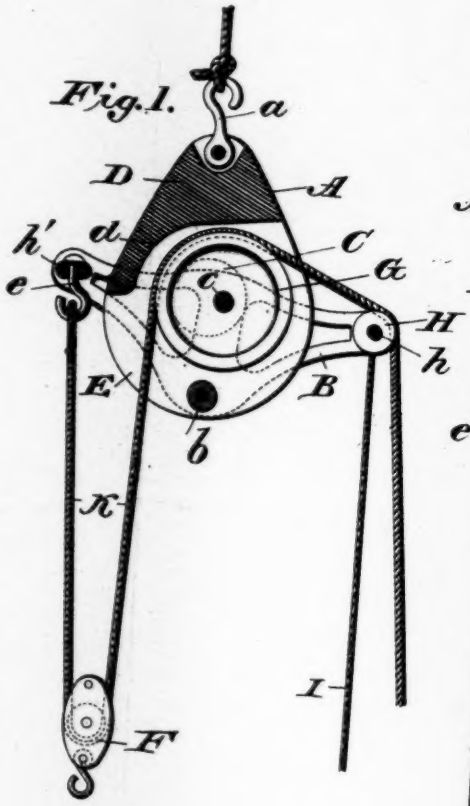
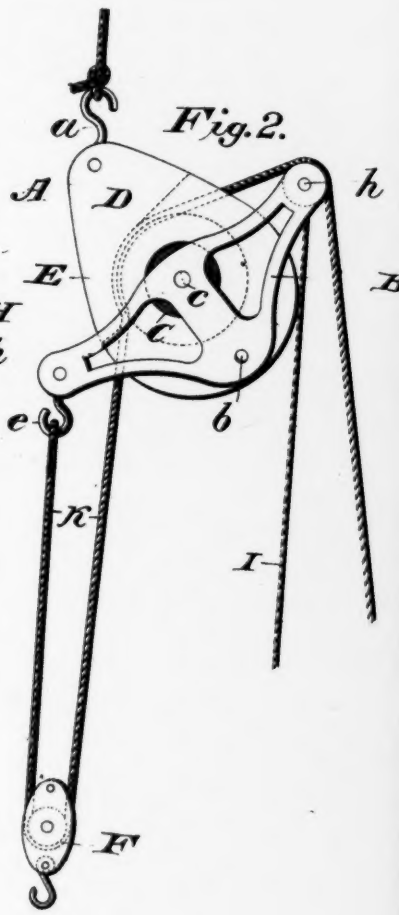


Fig. 2.



Witnesses

G. S. Elliott.

C. M. Thurston

Jesse T. Burr.

Inventor

by

Attorney

UNITED STATES PATENT OFFICE.

JESSE T. BURR, OF MOUNT VERNON, OHIO.

SELF-LOCKING PULLEY.

SPECIFICATION forming part of Letters Patent No. 461,316, dated October 13, 1891.

Application filed June 6, 1891. Serial No. 395,293. (No model.)

ll whom it may concern:

it known that I, JESSE T. BURR, a citi- f the United States of America, residing ount Vernon, in the county of Knox and of Ohio, have invented certain new and l Improvements in Self-Locking Pulleys; I do hereby declare the following to be a clear, and exact description of the inven- such as will enable others skilled in the which it appertains to make and use the e, reference being had to the accompanying ings, and to letters of reference marked eon, which form a part of this specifica-

his invention relates to improvements in locking pulleys.

he object of the invention is to provide a ice which will automatically lock the hoist- rope when the free end of the same is let e; and my invention consists in the con- ction and combination of the parts, as will ereinafter fully set forth, and particularly nted out in the claims.

n the accompanying drawings, forming t of this specification, Figure 1 is a sec- al view showing the parts of the block in osition for hoisting, and Fig. 2 is a side w showing the rope locked.

refers to the pulley-block, at the upper of which is located the usual hook *a*. To lower end of the block is secured a pin *b*, which are pivoted brackets B B, said ckets being located on each side of the ck and braced to each other by transverse s or pivots, the central pivot *c* passing ough enlarged apertures in the sides of block. The upper portion of the block is de solid, as at D, and depending therefrom the side walls E E, between which and on the pivot *c*, carried by the brackets, is sitioned the sheave G, over which the isting-rope passes. The inner wall *d* of e solid portion of the block is preferably oughened, so that when the hoisting-rope mes in contact therewith it will be better ipped. One end of the hoisting-rope K is cured to a swivel *e*, located at one end of e rock-frame, and passes through a pulley nd then up over the sheave G and the H, located at the opposite end of the rock-frame from the swivel *e*. A rope or cord I may be secured in any suitable manner to the end of the rock-frame, where the roller H is mounted, so that the rock-frame can be held in the position shown in Fig. 1 of the drawings in lowering the load, which is attached to the pulley F.

With a block and tackle thus constructed, it will be understood that when the free end of the hoisting-rope is drawn upon the rock-frame will be brought to the position shown in Fig. 1, so that the load may be elevated, and by simply releasing the free end of the rope the rock-frame will be swung upon its pivot *b* to clamp the rope between the sheave G and solid portion of the block, so as to sustain the load in any position.

I am aware that prior to my invention it has been proposed to provide a block and tackle with sheaves, which are mounted upon rock-bars, so that one of said sheaves can be brought in contact with arms or a solid portion attached to the frame; and I therefore do not claim such construction, broadly, as my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a self-locking pulley, the combination of a block A, having central apertures C C and a solid portion above said apertures, a rock-frame pivoted to the lower portion of the block, said frame carrying centrally a sheave, the pivot of which passes through the apertures C C, the ends thereof being attached to the rock-frame, a guide-roller for the hoisting-rope, carried by the rock-frame, and means for connecting said rope to the end of the frame opposite the guide-roller, substantially as set forth.

2. In combination with a block A, having a solid portion D, a rock-frame pivoted to the lower portion of the block and carrying centrally a sheave G, the pivot-pin of which passes through enlarged apertures in the block, and a swivel *e* and roller H, with which the hoisting-rope engages, substantially as set forth.

3. In combination with a block A, constructed substantially as shown, a rock-frame composed of brackets B B, pivoted to the

block and provided with a swivel *e* and roller H at opposite ends thereof, and a sheave G, journaled centrally within the frame and positioned between the depending walls of the block A, said block having a solid portion, which is roughened adjacent to the sheave, substantially as set forth.

In testimony whereof I affix my signatu
presence of two witnesses.

JESSE T. BUR

Witnesses:
FRED BEAVERSORN,
SOLON DAVIS.

264

(No Model.)

J. FARRELL.

HOISTING TACKLE.

No. 471,308. Patented Mar. 22, 1892.

Fig. 5.

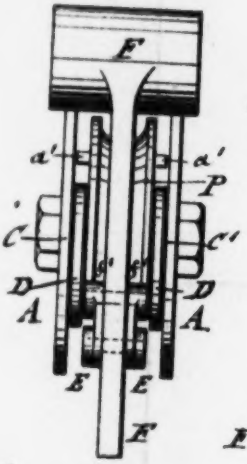


Fig. 1.

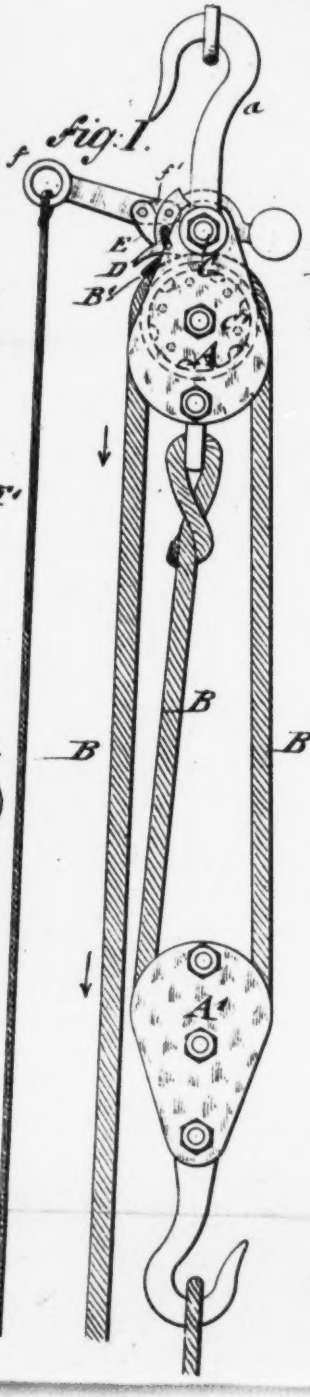


Fig. 2.

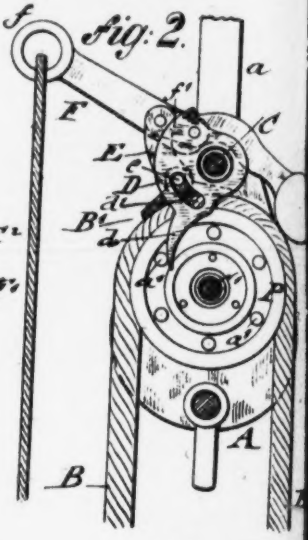


Fig. 4.

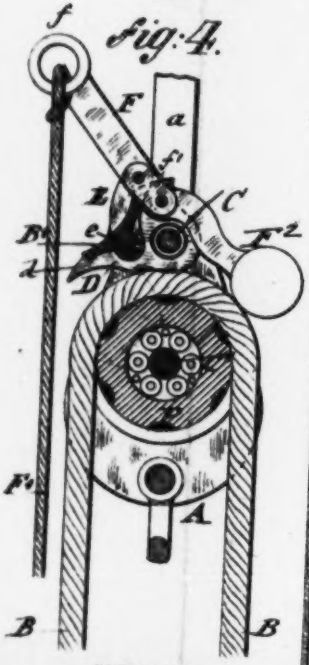
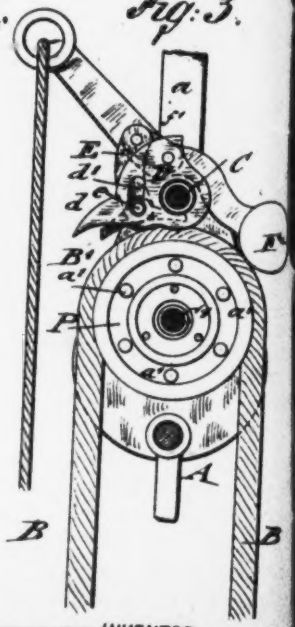


Fig. 3.



WITNESSES:

A. Schuhl.

Chas. F. Ellis

INVENTOR

John Farrell

BY

Goepel & Kaye

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN FARRELL, OF HUNTSVILLE, NEW JERSEY.

HOISTING-TACKLE.

SPECIFICATION forming part of Letters Patent No. 471,308, dated March 22, 1892.

Application filed November 18, 1891. Serial No. 412,273. (No model.)

To all whom it may concern:

Be it known that I, JOHN FARRELL, a citizen of the United States, and a resident of Huntsville, in the county of Sussex and State of New Jersey, have invented certain new and useful Improvements in Hoisting-Tackles, of which the following is a specification.

This invention relates to an improved hoisting-tackle of that class in which the load is easily operated and suspended in position at any point where it may be desired to stop the load for removing the same; and the invention consists of a hoisting-tackle the pulley of which is locked by a pawl-and-ratchet mechanism, the pawls of which are pivoted to a cross-bolt of the pulley-block and to a weighted brake-lever arranged above the pulley. The brake-lever is also pivoted to the upper ends of links, the lower ends of which are connected by a cross-pin in arc-shaped slots of the pawls. To the cross-pin of the pivot-links is hung a brake-shoe, that is firmly pressed against the hoisting-rope by the action of the brake-lever and the pawl-and-ratchet mechanism whenever the load is to be stopped, in which case the pawls engage the ratchet devices on the pulley, so that the brake action of the shoe on the hoisting-rope is increased according to the increase of strain on the hoisting-rope. On releasing the pawls by pull on the hoisting-rope and lowering the brake-lever the former is free to move so as to lower the load. By tilting the shoe on the cross-pin of the pivot-links in an upward position away from the cord the brake action on the same is entirely discontinued, so that the tackle can be operated without any brake action.

In the accompanying drawings, Figure 1 represents a side elevation of my improved hoisting-tackle, showing the same in position for lowering the load. Fig. 2 is a sectional side elevation of the same with one side plate of the pulley-block removed and showing the brake-shoe in position for locking the hoisting-cord. Figs. 3 and 4 are respectively a second side elevation and a vertical longitudinal section through the center of the pulley and its brake mechanism, showing the parts, respectively, in position before and after the brake-shoe is placed into tilted position for discontinuing the action of the brake device; and Fig. 5 is a top view of the pulley-block and brake device of the hoisting-tackle, showing the same on a larger scale.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A represents the upper pulley-block, A′ the lower pulley-block, and B the hoisting-rope, of my improved hoisting-tackle. The hoisting-rope B is attached to the lower end of the upper pulley-block, passed over the pulley of the lower block, then over the pulley P of the upper block, and then in downward direction to the person operating the hoisting-tackle. The upper pulley-block A is suspended by a strong hook *a* from a suitable point of support, while the load is applied to the hook of the lower pulley-block in the usual manner. The pulley P of the upper pulley-block A is applied by anti-friction rollers to the center-bolt or shaft C′ of the same, so that the friction of the same with the cross bolt or shaft is reduced as much as possible. The pulley P is provided in circumference with equidistant depressions *p*, as shown in Fig. 4, which serve for the purpose of increasing the friction with the hoisting-rope.

To the upper cross-bolt C of the pulley-block A are pivoted two pawls D, which engage by their lower pointed ends *d* laterally-projecting pins *a′* of the pulley P whenever the pawls are moved in downward direction. The pawls D are provided above the pointed lower ends with arc-shaped slots *d′* and pivoted at their upper ends to a brake-lever F. The slots *d′* are engaged by a cross-pin *e*, that connects the lower ends of two pivot-links E, the upper ends of which are also pivoted to the brake-lever F in front of the pivots of the pawls D, said brake-lever being provided at both sides with raised portions *f′*, which are cast integral with the lever, and which serve to thicken the same at the points of connection with the pivots of the pawls D and links E at its front end, with an eye *f* for attaching the trip-cord F′, and at its opposite or rear end with a weight F^2, by which the brake-lever is dropped when the tension of the trip-cord on its front end is relaxed.

To the cross-pin *e* at the lower ends of the pivot-links E is pivoted a curved brake-shoe B′, which serves to exert a brake action on

the hoisting-rope whenever the load is desired to be stopped. The brake-shoe B′ has a smooth surface, so as to permit of the lowering of the hoisting-rope without exerting any chafing action on the same.

The brake mechanism is operated by pulling the trip-cord F′ of the brake-lever F in downward direction, by which the brake-shoe is applied to the hoisting-rope by the action of the pivot-links E and the pawl-and-ratchet mechanism as the laterally-projecting pins of the pulley P engage the lower ends of the pawls D and cause them to move by their slots along the cross-pin *e*, so that the shoe B′ is firmly pressed in the hoisting-rope B by the motion of the pulley in a direction opposite to the parts. By the pressure of the projecting pins *a′* on the lower ends of the pawls the brake-shoe is tightly pressed against the hoisting-rope and held in this position by the locking action which the ratchet-pins exert on the pawls D. The greater the tension of the load on the hoisting-rope the greater will be the pressure exerted by the pins on the pawls, by the pawls on the brake-shoe, and by the latter on the hoisting-rope, which is assisted by the depressions in the pulley, so that the latter is rigidly held in position, whereby the load is sustained at any desired point.

Whenever it is desired to discontinue the brake action on the brake-shoe for lowering the load, the hoisting-rope is first pulled down by one hand in the direction of the arrows shown in Fig. 1, by which the pawls are lifted out of engagement with the ratchet-pins in the pulley. The trip-rope B is then pulled by the other hand, and thereby the brake-shoe applied with some friction to the hoisting-rope, in which position the brake-lever F raises the pawls and prevents them from engaging the ratchet-pins. This motion of the pawls is permitted by the arc-shaped slots *d′* along the cross-pins of the brake-shoe. The hoisting-rope is then released and the descent of the load controlled wholly by the trip-rope. The hoisting-rope is thereby enabled to move under the brake-shoe, so as to lower the load to any required speed.

In case it should be desired to operate the hoisting-tackle without any brake action the brake-shoe is tilted on the cross-pin *e* of the pivot-links E from the position shown in Fig. 3 to the upwardly-inclined position shown in Fig. 4 until it is arrested by the brake-lever. This is readily accomplished by taking hold of the front end of the shoe and pressing it in upward direction, so that the rear end presses on the hoisting-rope. The upward pressure on the front end of the shoe compresses the rope and causes the parts to yield sufficiently to permit the tilting of the brake-shoe. In this position of the brake-shoe it is removed to such a distance from the hoisting-rope so as not to touch the same, its action being suspended as long as the brake-shoe remains in its upwardly-inclined position.

When it is desired to use the brake d
again, the brake-shoe is turned in down
direction into the position shown in Fig.
which position it is readily applied at
time to the hoisting-rope, so as to stop
same while the load is lowered, by pullin
rope and trip-cord in the manner befor
scribed, so that the pawls are moved ou
engagement with the ratchet-pins of the
ley P and the brake-shoe pressed on the h
ing-rope, as shown in Fig. 1.

It is obvious that in place of the ratc
pins on the pulley P ratchet-teeth may be
or any other devices by which the lockin
tion is produced on the pulley by the pawl

The advantages of my improved hoist
device are, first, that a very effective br
action of the shoe is produced in conjunct
with the locking action of the pawls on
ratchet devices of the pulley; secondly, that
load in being lowered can be wholly control
by the trip-cord being pulled in a downw
direction, which is accomplished by one h
merely, which is an important feature,
heretofore hoisting-tackles of this class h
to be lowered by the use of both hands a
the joint action of the trip-cord and hoisti
rope; thirdly, that owing to the smooth surfa
of the brake-shoe no injurious chafing acti
is produced on the hoisting-rope, while stil
reliable locking of the rope is obtained by t
pressure of the brake-shoe and the fricti
of the depressions of the pulley on the hoi
ing-rope, and, fourthly, that the action of t
brake device can be entirely suspended,
desired.

Having thus described my invention, wh
I claim as new, and desire to secure by Lette
Patent, is—

1. The combination, with a pulley-block an
hoisting-rope, of a pulley, a pawl-and-ratche
mechanism for locking or releasing said pu
ley when the rope is moved in one or the oppo
site direction, a weighted brake-lever pivote
to the pawls of said ratchet mechanism,
brake-shoe connected by pivot-links to th
brake-lever, and a trip-rope attached to th
brake-lever, substantially as set forth.

2. The combination, with a pulley-block and
hoisting-rope, of a pulley having ratchet-pins
pawls adapted to engage said pins, a weighted
brake-lever pivoted to said pawls, a brake-
shoe connected by pivot-links with the brake-
lever, and a trip-rope attached to the brake-
lever, substantially as set forth.

3. The combination, with a pulley-block and
hoisting-rope, of a pulley provided with ratch-
et-pins, pawls adapted to engage said pins, a
weighted brake-lever pivoted to the upper
ends of said pawls, a brake-shoe connected
by pivot-links with the brake-lever, means for
guiding the pawls on the cross-pin of the brake-
shoe, and a trip-rope applied to the upper end
of the brake-lever, substantially as set forth.

4. The combination, with a pulley-block and
its hoisting-rope, of a pulley having ratchet-
pins and depressions in its circumferenc

h adapted to engage said ratchet-pins, a ated brake-lever pivoted to said pawls, ing a smooth surface, pivot-links connecting the brake-lever with the brake-shoe, and ip-rope attached to the brake-lever, substially as set forth.

The combination, with a pulley-block and ting-rope, of a pulley having laterally-ecting ratchet-pins, pawls pivoted to a -bolt of the pulley-block and adapted to age or release said pins, a weighted brake-er pivoted to said pawls, links pivoted to brake-lever and having a cross-pin at their lower ends, said cross-pin extending into arc-shaped slots of the pawls, a brake-shoe pivoted to said cross-pin, and a trip-rope attached to the brake-lever, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHN FARRELL.

Witnesses:
PAUL GOEPEL,
CHARLES SCHROEDER.

270

(No Model.)

B. R. SOCKMAN.

SELF LOCKING PULLEY.

No. 473,093. Patented Apr. 19, 18

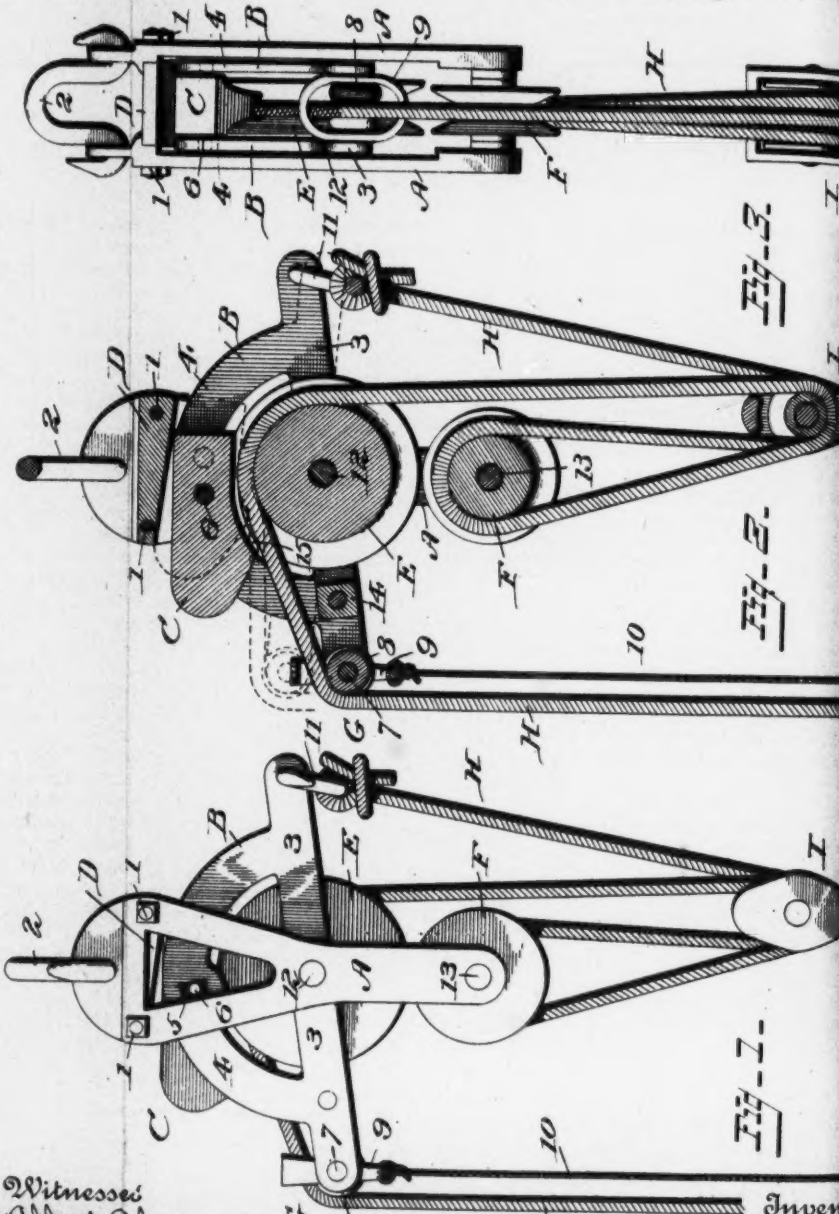


Fig. 3.

Fig. 2.

Fig. 1.

Witnesses:
Albert S. Seiden
J. H. Dobson

Inven
Bryant R. Sockm

By his Attorney,
Wm Hunter M

UNITED STATES PATENT OFFICE.

YANT R. SOCKMAN, OF MOUNT VERNON, OHIO, ASSIGNOR OF ONE-HALF TO WILLIAM L. McINTIRE, OF SAME PLACE.

SELF-LOCKING PULLEY.

SPECIFICATION forming part of Letters Patent No. 472,092, dated April 19, 1892.

Application filed December 26, 1891. Serial No. 416,198. (No model.)

all whom it may concern:

Be it known that I, BRYANT R. SOCKMAN, a
izen of the United States of America, re-
ing at Mount Vernon, in the county of
ox and State of Ohio, have invented cer-
n new and useful Improvements in Self-
cking Pulleys, of which the following is a
cification, reference being had therein to
accompanying drawings.

This invention relates to an improvement
self-locking pulleys; and it has for its ob-
cts, first, to provide a pulley having locking
echanism adapted to be actuated by the
ight of the load being lifted to lock the
lley or pulleys against rotation, whereby
ould the hoisting-rope break at a point re-
oved from the pulley or should it be re-
ased by the operator the locking mechanism
ill be automatically actuated to lock the pul-
y, and thus prevent the load from descend-
g, and, secondly, to provide a self-locking
lley having a stationary yoke carrying the
lleys and a stop-block, and a swinging head
rrying a locking-block and mechanism for
inging the head, whereby the locking-block
ay be readily released from contact with the
op-block by the swinging of the said head.

The invention will first be described in con-
ection with the accompanying drawings and
en pointed out in the claims.

Figure 1 is a side elevation of the pulley as
appears when ready for use. Fig. 2 is a
rtical longitudinal sectional view showing
e positions occupied by the locking-block
ith relation to the stop-block when in locked
nd unlocked positions, the latter position be-
g shown in dotted lines. Fig. 3 is an end
levation looking in the direction of the ar-
w in Fig. 1, showing more particularly the
onstruction of the releasing mechanism.

Referring to the drawings, A designates the
oke; B, the swinging head; C, the locking-
lock; D, the stop-block; E and F, the pul-
ys, and G the releasing mechanism.

The yoke A is constructed, preferably, of
o pieces of metal clamped together by bolts
and held at a suitable distance apart by the
stop-block D, which latter is also held in place
by the bolts 1, a double hook 2, engaging with
openings near the top of the respective sides
of the yoke, serving as a means to suspend
the latter from any desired fixture. The
swinging head B is also preferably construct-
ed of two sections, each of which is formed
with a straight or base portion 3 and an arch
4. Near the top of each arch is a slot 5, the
two slots being arranged in horizontal regis-
ter with each other and serving as bearings
for a rod 6, which passes through and sup-
ports the locking-block in a position to be
normally out of engagement both with the
stop-block D and the pulley E, as clearly
shown in Fig. 2, and also serves the purpose
of limiting the downward movement of the
head when the locking-block is out of engage-
ment with the stop-block, as clearly shown in
Fig. 1. The base portions 3 project some dis-
tance beyond the arches at both ends of the
head, the projecting portions at one end form-
ing a support for the head-releasing mechan-
ism, which comprises a rod 7, on which is
journaled a grooved guide-roller 8, a link 9,
and a cord 10, and the opposite end as a
means of attachment for a link 11, to which
is secured one end of the hoisting-rope H.
The head is pivoted intermediate its length
on a rod 12, which latter also forms a journal
for the pulley E, to which reference has been
made, the pulley F being journaled on a rod
13, passing through the lower portion of the
yoke. The two sections of the head are held
at a suitable distance apart by means of a
spacing-block 14, Fig. 2.

Having thus fully described the different
parts of my invention, I will explain the man-
ner of its operation: One end of the hoisting-
rope is passed over the guide-roller 8, then
around pulley E, then through a block I, then
over pulley F, then back again through block I,
and is secured to the link 10. The block I car-
ries a hook or other device (not shown) for sup
porting the load to be lifted. As soon as strain
is applied to the hoisting-rope the head B is
swung to the position shown in Fig. 1, thus
moving the locking-block C out of contact
with the block D. When it is desired to poise
the load being lifted, the rope H is released
and the load will immediately swing the head
to the position shown in dotted lines in Fig.
2, thereby bringing the locking-block into

contact with the inclined under face of the stop-block, which former bears upon the hoisting-rope and locks the pulley E in an obvious manner. To release the rope the cord 10 is pulled down, thereby swinging the head back to the position shown in Fig. 1.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a self-locking pulley, a stationary yoke carrying a stop-block and a pulley, in combination with a swinging head journaled within the yoke and carrying a guide-roller at one end, a locking-block, and a hoisting-rope secured to the free end of the said head and passing around the said pulley and over the guide-roller.

2. In a self-locking pulley, a stationary yoke carrying a rigid stop-block and a pulley, in combination with a swinging head journaled within the yoke and having two slots arranged in horizontal register, a locking-block located below the stop-block, a rod working in slots to support the locking-block and to the movement of the head, a guide-roller ried by one end of the head, and a hois rope secured to the other end and pa around the said pulleys and over the g roller.

3. In a self-locking pulley, a stationary carrying a stop-block and a series of pu arranged one above the other, in combina with a swinging head pivoted on the ax one of the pulleys and carrying a lock block adapted to be moved into and ou engagement with the stop-block by the s ing of the head, and a hoisting-rope pas around the said pulleys.

In testimony whereof I affix my signatu presence of two witnesses.

BRYANT R. SOCKMA

Witnesses:

WILL E. GRANT,

F. O. LEVERING.

(No Model.) 3 Sheets—Sheet 1.

D. L. TSCHANTZ.

HAY CARRIER.

No. 601,291. Patented Mar. 29, 1898.

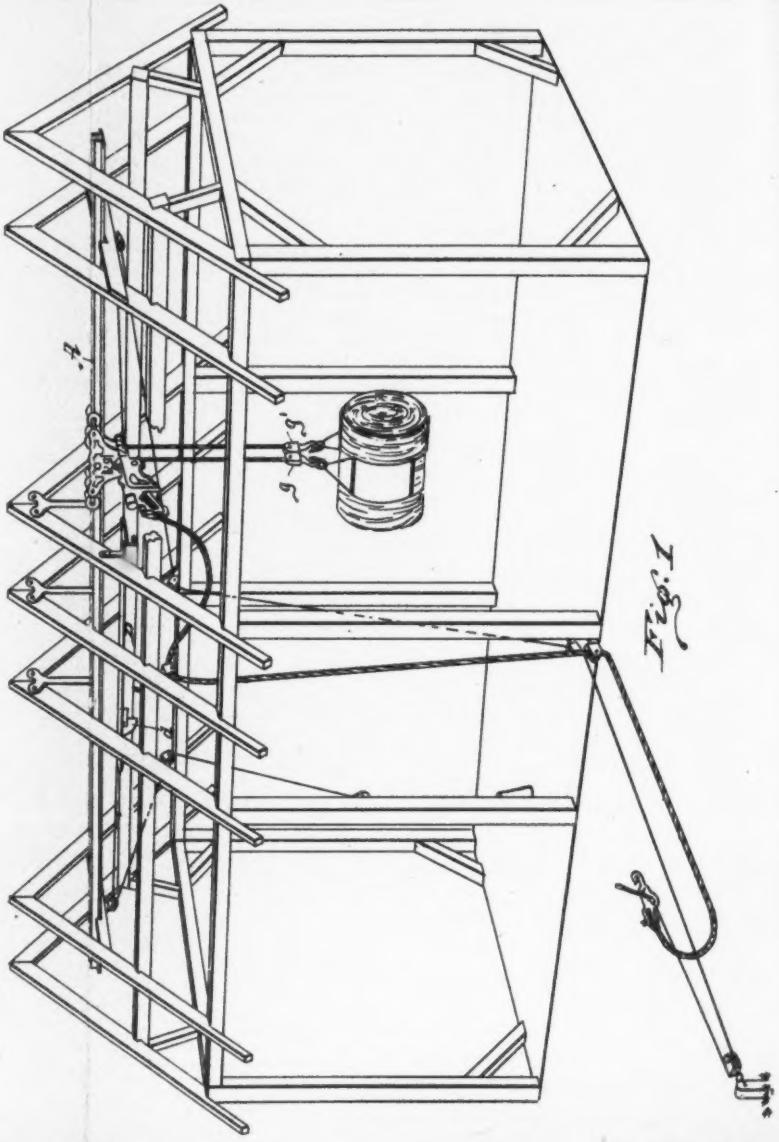


Fig. 1.

WITNESSES

Thos. Hillen

Chas. W. Dall

INVENTOR

David L. Tschantz

by Chas. A. Miller

Attorney

(No Model.) 3 Sheets—Sheet 2

D. L. TSCHANTZ.

HAY CARRIER.

No. 601,291. Patented Mar. 29, 1898

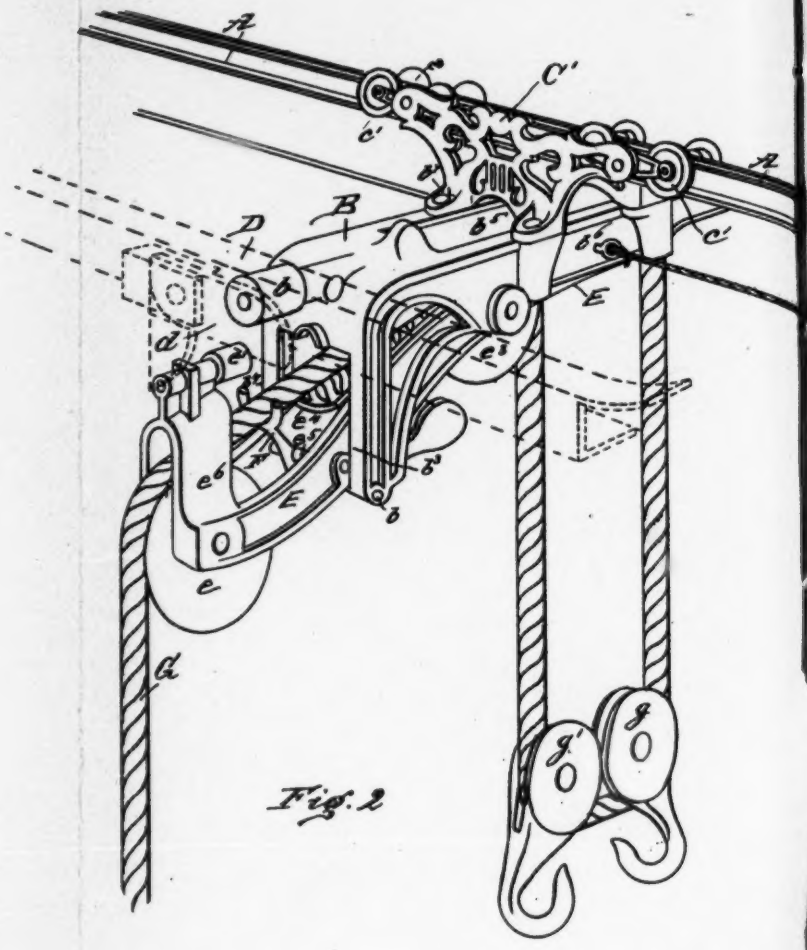


Fig. 2.

WITNESSES

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Attorney

(No Model.)

278

3 Sheets—Sheet 3

D. L. TSCHANTZ.

HAY CARRIER.

No. 601,291. Patented Mar. 29, 1898

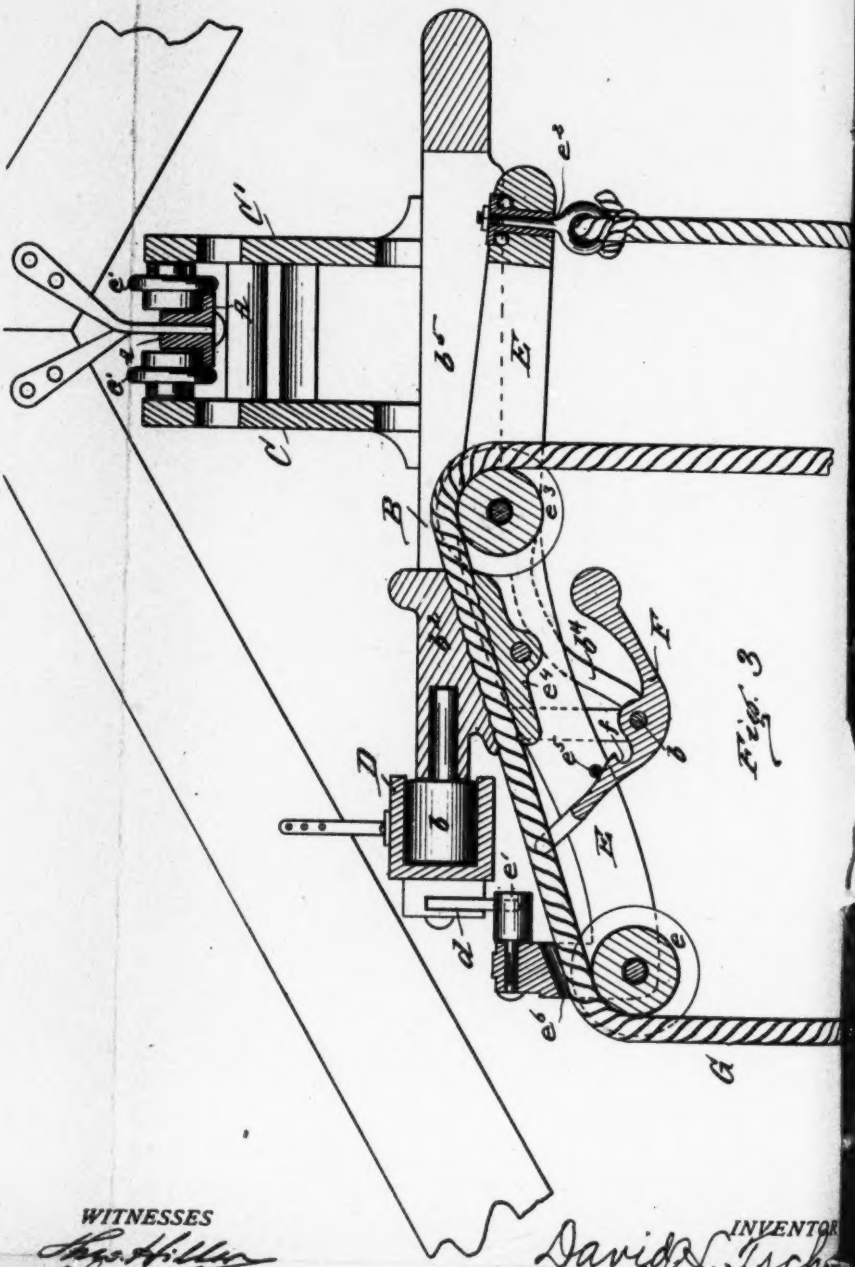


Fig. 3

WITNESSES

Chas. Hill

Chas. M. Hall

INVENTOR

David L. Tschantz

by Chas. A. Miller

Attorney

NITED STATES PATENT OFFICE.

DAVID L. TSCHANTZ, OF ORRVILLE, OHIO.

HAY-CARRIER.

ECIFICATION forming part of Letters Patent No. 601,291, dated March 29, 1898.

Application filed September 9, 1897. Serial No. 651,037. (No model.)

hom it may concern:

nown that I, DAVID L. TSCHANTZ, a the United States, and a resident of county of Wayne, State of Ohio, nted a new and useful Improvement arriers, of which the following is a r, and exact description, reference d to the accompanying drawings, part of this specification.

rention relates to improvements in iers, the object of which is to pro-de-draft carrier by means of which may be raised and lowered at the barn instead of the end thereof, as re, and to provide means by which may be automatically locked at any levation, as is hereinafter more fully d and claimed.

accompanying drawings similar let-reference refer to similar parts.

e 1 is a perspective view of hay-car-trating my invention and the method hing same to the frame of the barn. an enlarged perspective view of the Fig. 3 is a sectional view of carrier, the elevating-rope locked in engage-ith the frame of carrier.

notes the track upon which the carrier nted, and may be of any of the well-forms of strap, T, or angle iron.

a carrier-frame proper, upon which re mounted, at one side thereof, brack-nd C', carrying the carrier-wheels c', may be of any desired form to adapt o the shape of the track. I have shown prefer to use upon each side of the four wheels mounted upon pivoted o that the wheels may adapt them-to any inequality in the track, and by ing in this way eight wheels for each the load is more evenly distributed e carrier runs more easily along the

frame B is substantially L-shaped, hav-on either side of the horizontal limb s to which are attached the various parts carrier, as hereinafter designated. In part of the frame there is provided b^2, through which the end of the ver hereinafter referred to swings. pper outer end of frame B there is a roller b, which engages with an additional or supporting track D, attached to the beams of the barn at a point directly opposite to the barn-door or such place of loading as may be desired. In the accompanying drawings I have shown this track D to consist of U-shaped iron; but it may be made of any desired form or shape, its object being simply to act as an additional support to the carrier while the load is being raised and as an additional protection against lateral strain. It is also used for the purpose of carrying the trip d, which consists of a pivotally-depending pawl which depresses the locking-lever of the carrier, as will hereinafter be more fully described.

About the center of the carrier-frame B and to the depending sides or flanges thereof there is pivotally attached a lever-frame E, the outer end e^6 of which is substantially U shaped, for the purpose of forming a housing for the pulley e and supporting the tripping-roller e', mounted upon the U-shaped portion of the frame and adapted to engage the tripping or unlocking block d. To the inner end of the lever-frame E there is attached in ball-bearings a swivel e^2 and by means of which twisting in the draft-rope is entirely avoided. At the point of pivoting the lever-frame E to the carrier-frame B there is mounted a pulley e^3 to carry the draft-rope. A short distance in advance of this pulley there is pivotally mounted in the lever-frame a clamping-block e^4, which is adapted to clamp the draft-rope up against a corresponding clamping-block b^3, formed in the under surface of the upper part of the carrier-frame B. These clamping-blocks are shaped so as to conform to the shape of the draft-rope, and thus give the greatest amount of gripping or holding force. The lower depending limbs b^3 and b^4 of the carrier-frame B are connected by a rod b, which, in addition to acting as a stop for the lever-frame E, carries the balanced locking-lever F. Forward of the pivotal point of the balanced locking-lever F there is provided a notch f for engagement with a bar e^5, connecting the sides of the lever-frame E. The outer end of the balanced locking-lever F is bifurcated or pronged for engagement with the draft-rope and to lift the same off of the clamping-block e^4 when the lever-frame E shall have been depressed by the trip d. A

draft-rope G is intended to be passed through the pulley *e*, then through the carrier-frame and between the clamping-block b^2, mounted thereon, and the pivoted clamping-block e^4, mounted on the lever-frame E, thence through the pulley e^3 and through the pulleys *g* and *g'*, to which may be attached either the hay-fork or the hay-sling, as may be desired, and the rope is then attached to the swivel e^2 at the inner end of lever-frame E.

In erecting the carrier, the tracks A and D having been placed, the draft-rope is passed through the carrier, as heretofore described. The carrier is then mounted on the track A, and the pulley *b* engages with the supporting-track D. The free end of the draft-rope is then passed through a pulley attached to the rafters of the barn, then passed down and through a pulley attached to the floor, and the end thereof is attached to an automatic horse-hitch, which will be the subject of another application. For the purpose of drawing the carrier to either side of the barn and returning it again to the place of loading, small cords or ropes are attached to hooks b^6 and b^7 upon either side of the carrier-frame, and thence extend to either end of the barn, passed through pulleys, and are returned to pulleys on the rafters near the door, and to one end of the rope there is attached a weight equal to and balancing the weight of the carrier, and the other end of the rope is passed through a pulley on the floor, and thence through a pulley attached to a post or stake driven in the ground outside the barn, and then engages with the automatic horse-hitch heretofore referred to.

In operation, the load of hay or other material having been driven into the center of the barn, the fork or sling is engaged therewith. The horses are detached from the wagon and hitched to the automatic horse-hitch and driven out in a direction at right angles to the track, when the load is raised by means of the draft-rope passing through the pulleys in the carrier heretofore described. When the load has been raised to any desired height, the horses are stopped, when automatically the load resting upon the draft-rope pulls down the inner end of the lever-frame E, thus raising the pivoted clamping-block e^4, which presses the draft-rope up against the clamping-block b^2, holding it tightly in engagement therewith. The horses are then turned around, when the smaller ropes heretofore described come into action and pull the carrier to the end of the barn, where the fork or sling is unlocked and the load dropped. The small rope is then disengaged from the automatic horse-hitch, and the weight heretofore referred to pulls the carrier back toward the center of the barn, and as it passes the trip *d* the pulley *e'* on the lever-frame E, disengaging the clamping-blocks from the rope until the rod e^5 engages with the notch *f* on the lever F, locking it in its lowered position, and the prongs of the balanced lever F engage the rope, lifting it up and off of the p clamping-block e^1, permitting the lowe the draft-rope G.

When another load has been taken force exerted to raise the load depres outer end of the lever-frame, which releases the balanced locking-lever, a operation is repeated.

It will be observed that by means carrier one man can operate the carri manage the horses, and that by meaps automatic locking feature much po saved. Heretofore it has not only been sary to raise the load to the carrier b could be locked and moved along the but the draft-line has been in line w track, which places the horses at anoth of the yard, necessitating a man or manage the team and another the l and unloading.

Having thus fully described my inv what I desire to claim and secure by L Patent is—

1. A hay-carrier adapted to be m upon a track, and having a lateral ext carrying the pulleys for the draft-rope stantially as described and for the p set forth.

2. The combination in a hay-carrier ed to be mounted upon a track of a having a lateral extension, and a pull rying frame pivotally attached there adapted to carry and engage and dis automatically, the draft-rope, substa as described and for the purpose set fo

3. The combination in a laterally-op hay-carrier of a frame adapted to be m upon a track, a pulley-carrying frame ally attached thereto, a clamping-block otally attached to the pulley-carrying fr and adapted to engage the draft-rope, a balanced locking-lever to automatically gage and disengage the pulley-carrying fra substantially as described and for the p pose set forth.

4. The combination in a hay-carrier laterally-extending frame having depe flanges and a clamping-block formed th with a pulley-carrying frame pivotal tached thereto at its center, and h mounted upon its free inner end a swivel or ring for engagement with the draft- pulleys mounted in its free outer en center, a pivoted clamping-block inter ate the pulleys, and means for automati locking and unlocking the same, substan as described and for the purpose set fo

5. The combination in a hay-carrier frame adapted to be mounted upon a t and having a lateral extension, a roller m ed thereon adapted to engage with a sup ing-track, a pulley-carrying frame piv attached to the carrying-frame, a clampin block pivotally attached thereto and adapte to engage the draft-rope and a balanced loc ing-lever adapted to automatically eng and disengage the pulley-carrying fra

g-roller mounted upon the outer end pulley-carrying frame, and a pivotally- ling pawl mounted upon the support- ck, substantially as described and for rpose set forth.

he combination of a laterally-operated arrier frame, with a lateral support- ck suspended at the side thereof and d to support the outer end of the car- ubstantially as described and for the se set forth.

The combination in a laterally-operated hay-carrier adapted to be mounted upon a track of a supporting-track suspended at the side thereof to engage the outer end of the carrier, and a tripping device mounted thereon, substantially as described and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 30th day of August, A. D. 1897.

DAVID L. TSCHANTZ.

Witnesses:
CHAS. R. MILLER,
CHAS. M. BALL.

No. 609,438.

Patented Aug. 23, 1898.

C. S. KERSHAW.

BLOCK AND TACKLE.

(Application filed Dec. 3, 1896.)

(No Model.)

2 Sheets—Sheet 1.

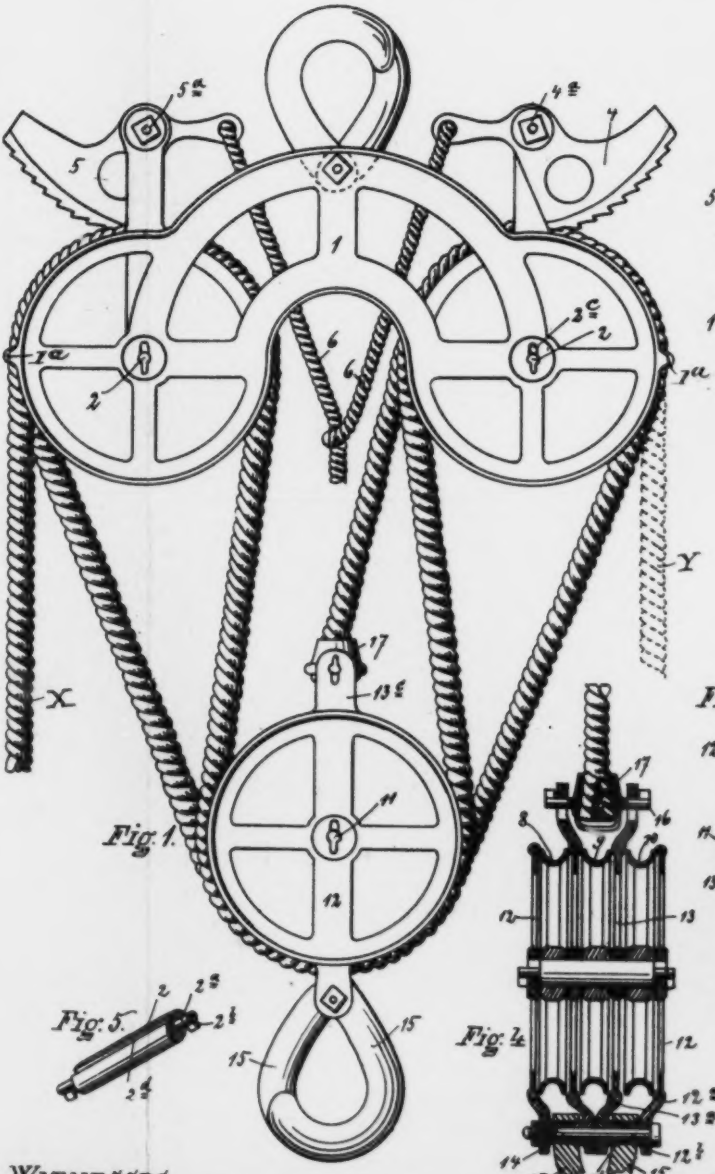


Fig. 1.

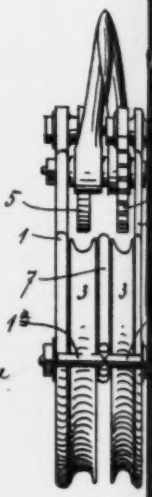


Fig. 2.

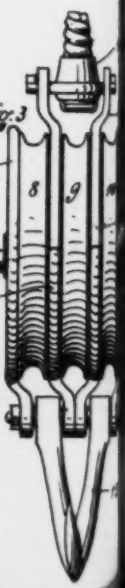


Fig. 3.

Fig. 4.

Fig. 5.

WITNESSES.

Rich. A. George.

C. W. Jones

INVENTOR

CHARLES S. KERSHAW

BY Risley, Robinson & Love

ATTORNEYS.

286

No. 609,438.

Patented Aug. 23, 1898.

C. S. KERSHAW.

BLOCK AND TACKLE.

(Application filed Dec. 3, 1896.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 8.

Fig. 7.

Fig. 6.

Fig. 9.

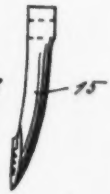


Fig. 10.

Fig. 11.

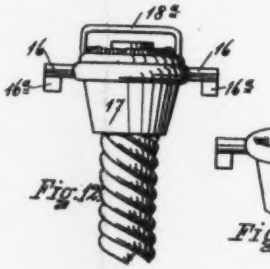


Fig. 12.

Fig. 14.

Fig. 15.

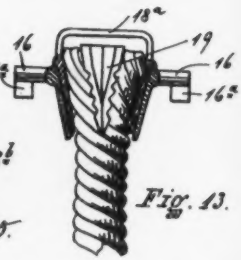


Fig. 13.

Fig. 16.

Fig. 17.

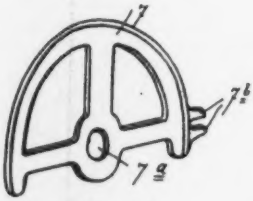


Fig. 18.

Fig. 19.

WITNESSES.

Rich. A. George

E. W. Jones

INVENTOR

CHARLES S. KERSHAW

By Risley, Robinson & Love

ATTORNEYS.

THE HORNS PETERS CO. PHOTO-LITHO. WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES S. KERSHAW, OF SHERBURNE, NEW YORK.

BLOCK AND TACKLE.

SPECIFICATION forming part of Letters Patent No. 609,438, dated August 23, 1898.

Application filed December 3, 1896. Serial No. 614,317. (No model.)

whom it may concern:

it known that I, CHARLES S. KERSHAW, rburne, in the county of Chenango and of New York, have invented certain new seful Improvements in a Block and e; and I do hereby declare that the fol- g is a full, clear, and exact description of vention, which will enable others skilled art to which it appertains to make and e same, reference being had to the ac- anying drawings, and to the letters and s of reference marked thereon, which part of this specification.

the drawings, Figure 1 shows a side ele- n of my improved block and tackle. Fig. ws an edge view of the upper block. Fig. ws an edge view of the lower block. Fig. ws a vertical section of the lower block. shows in perspective a sheave-bearing Fig. 6 shows a side elevation of a two- or double hook employed in the construc- Fig. 7 shows an inner face view of one of the hook. Fig. 8 shows an edge view e same. Fig. 9 shows the other part of ook. Fig. 10 shows an edge view of the . Fig. 11 shows a section of the hook, n on line A B of Fig. 9. Fig. 12 shows a securing device for securing one end of ope to the tackle-block. Fig. 13 shows ame in vertical section. Fig. 14 shows spective view of one of the conical parts oyed. Fig. 15 shows a perspective view e other conical sleeve. Figs. 16 and 17 the two parts of a two-part conical wedge ecuring the rope in the sleeve shown in 15. Fig. 18 shows in perspective view of the division-plates employed in the ys between the sheaves. Fig. 19 shows ision-plate in connection with hangers tituting a part of the framework of the ks.

eferring to the reference letters and fig- in a more particular description of the ce, 1 indicates the frame of the upper ', which supports the sheave-bearing pins considerable distance from each other, n each of these pins 2 2 are mounted a of sheaves or pulleys 3 3. The opposite of the frame are in part secured to- r by the bearing-pins 2 2, which are pro- l with a reduced end 2^a and a key-like ', which is adapted to pass through a suitable opening 2^c in the frame, and when passed through the pin is given a partial rotation, so that the bit will stand in the position shown in Fig. 1. The opposite sides of the frame are thereby secured together. On the upper side of the pin 2 is provided a groove 2^d for the flow of lubricant for the sheaves, which lubricant is introduced through the keyhole-openings 2^c in the frame.

In connection with the upper pulley-block are provided two rope locks or clutches 4 and 5, pivoted to arms from the opposite sides of the frame at 4^a and 5^a, respectively. These clutches are provided with arms to which is attached a branching cord 6, by means of which they may be operated to disengage them. These rope-clutches are provided at either side of the block, as shown, one for each set of sheaves.

In the upper pulley-block is provided a division-plate 7 between the sheaves, which plate is secured by the pin 2 passing through the opening 7^a therein, and the plate is retained in position and from rotation by the projections 1^a 1^a from the opposite sides of the frame engaging and meeting between the lugs 7^b on the part 7.

The lower pulley-block consists of three pulleys 8, 9, and 10, mounted on a single pin 11 (similar in construction to pin 2) and in the frame composed of the outer parts 12 12 and inner parts 13 13 of the frame. The outer parts 12 are extended downward in a lug or projection 12^a, having an inwardly-extending boss 12^b, while the inner frame parts 13 are extended downward in projections 13^a, having outwardly-projecting bosses 13^b. A hole is provided through the lower ends of these frame projections and through the bosses referred to, and the lower end of the pulley is held together by a bolt 14 passing through the same. The two sets of bosses 12^b and 13^b form substantial bearings for the two-part hook 15, the parts of which are hinged thereon and free to swing to and fro, as well as to have a slight lateral movement on the bosses. The hook consists of the two parts 15 15, which are duplicates of each other, curved, and of the shape shown and are provided each with two transverse teeth *a* and a longitudinal tooth *b* and with two transverse depressions or indentations *c* and a

lateral indentation *d*, so that when the two parts of the hook are brought together, as shown in Fig. 6, the teeth will interlock with the indentations and make the hook strong and solid to withstand the hard usage to which a tackle-hook is subjected. For attaching one end of the rope to the lower tackle-block the inner frame parts 13 are provided with upwardly-extending arms 13^c, which at their upper ends are adapted to receive the lateral projections 16 from the conical holder 17. The projections 16 are provided with key-like bits 16^a, and the ends of the arms 13^c are provided with downwardly-extending key-hole-openings adapted to receive the bit and projection referred to. By this arrangement the upper part of the inner portion of the frame of the lower pulley is supported, as well as a swiveling fastening provided for the end of the rope. The part 17 is adapted to receive the conical sleeve 18, provided with a bail 18^a and a shoulder 18^b, which engages on the lower end of the holder 17, as shown particularly in Fig. 3. The sleeve 18 is adapted to receive the end of the rope, as shown in the drawings, particularly Figs. 12 and 13, and the same is secured by a two-part corrugated conical wedge 19. The two parts of this wedge enable it to be placed from each side of the bail 18^a, while the bail prevents the rope from shoving through the fastener or the fastener becoming loose and dropping off while the rope is used without being secured to the lower pulley-block, as hereinafter described. The bail 18^a also operates to prevent the wedge 19 from getting so far out of position as to fail to operate.

The tackle may be strung up as shown in Fig. 1, in which one end X is used as a pull-rope, while the other end is secured to the lower tackle-block, as shown and described. In this way the operation of the tackle is obvious, and it may only be necessary to note that on account of the distance apart at which the sets of wheels are placed in the upper block the tackle as a whole may be closed up, so that the lower block takes a position nearly between the upper sheaves, and the tackle is capable of being closed to a minimum of length, while with the tackle the locks or clutches 4 and 5 automatically secure the tackle whenever the power on the pull-rope is r
When the tackle is used as shown i
the clutch 4 may be tied, so that it wi
erate, as the clutch 5 will serve all n
purposes. In lowering the lower b
clutch 5 is thrown out by pulling on
attached to it, as shown, or both clu
pulled out when both are in use.
to provide a tackle which is capable o
plishing a more rapid hoist, the en
rope which is attached to the lower bl
be disengaged and passed down the o
of one of the upper sheaves, as show
ted lines at Y—that is, the rope is pa
other way around the sheaves. T
men may operate on the pull-ropes
at the same time, and in such ca
clutches 4 and 5 are used to secure w
advantage is gained. When strung u
manner last described, the tackle
course be operated by one man, in wh
one or the other of the clutches will
the rope, which might be used as th
pull-rope. The hook for supporting
per tackle-block is the same as the
scribed in connection with the lower
block.

What I claim as new, and desire t
by Letters Patent, is—

1. In a tackle, a rope-fastener consi
an external sleeve secured to the tackl
frame, an internal shouldered conica
adapted to receive the end of the rop
over and secured to the larger end
conical sleeve and a two-part conica
adapted to separate the fibers of the r
bind them in the inner sleeve, subst
as set forth.

2. A tackle-block frame having reg
bosses on opposite parts, the securi
passing through the frame and bosse
pair of interlocking hooks having
holes at right angles with the line of
tion between the hooks, which eyes
the said bosses, substantially as set f

In witness whereof I have affixed
nature in presence of two witnesses.

CHARLES S. KERSH

Witnesses:
E. W. WALKER,
H. H. TUCKER.

No. 717,410. Patented Dec. 30,

J. W. JOHNSON & W. W. SCARBOROUGH.

HOISTING APPARATUS.

(No Model.) (Application filed Sept. 18, 1902.)

FIG. 1.

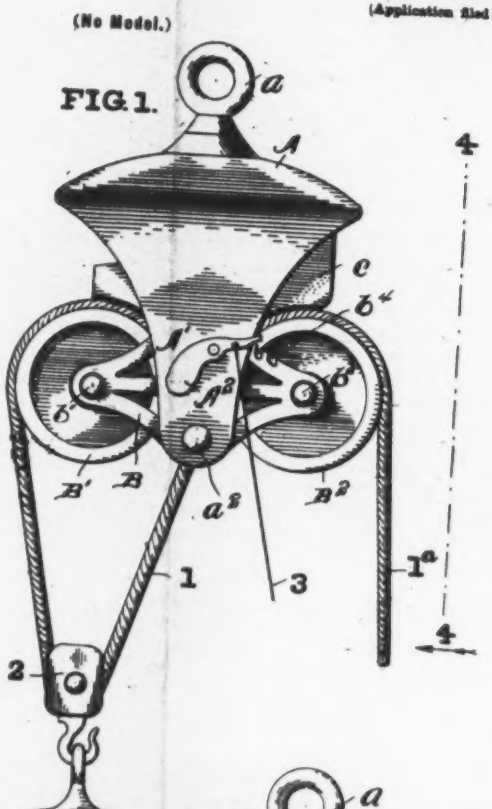


FIG. 3.

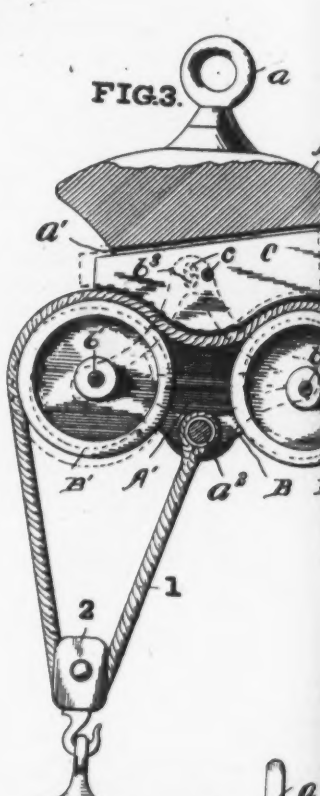


FIG. 2.

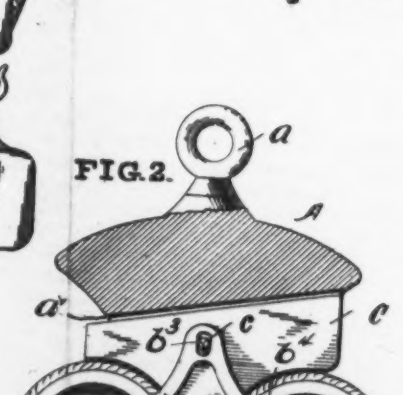


FIG. 4.

Witnesses:
Chas. K. Davies.
Daniel Edward Arctur

Inventors:
John W. Johnson
and William W. Scarborough
By E. W. Bradford
Atty.

TORN F

NITED STATES PATENT OFFICE.

N W. JOHNSON AND WILLIAM W. SCARBOROUGH, OF UPPER SANDUSKY, OHIO.

HOISTING APPARATUS.

FICATION forming part of Letters Patent No. 717,410, dated December 30, 1902.

Application filed September 12, 1902. Serial No. 123,081. (No model.)

om it may concern:

own that we, JOHN W. JOHNSON AM W. SCARBOROUGH, citizens of States, residing at Upper San- he county of Wyandot and State ve invented certain new and use- ements in Hoisting Apparatus, of ollowing is a specification.

invention consists in an improved of automatically-locking hoist- , which is of a simple and inexpen- the same time durable construc- ue effective and convenient in op- will be hereinafter more fully de- l claimed.

g to the accompanying drawings, made a part hereof, and on which erence characters indicate similar re 1 is a side elevation of a hoist- embodying our said invention; milar view with the outside plate ing removed; Fig. 3, a view simi- . 2, omitting the outside pivoted nd Fig. 4, an edge view as seen when the direction indicated by the ar- the dotted line 4 4 in Fig. 1.

drawings the portions marked A the main housing or frame, B the ames carrying the sheaves, and C shoe or block.

sing A may be a single casting or parts suitably secured together and a head or top piece of sufficient trength for the purpose and down- ojecting arms A′ on each side there- table eye *a* is provided on the top for e of hanging the device wherever used. The inner surface of the between its arms A′ is formed in- shown most clearly in Figs. 2 and 3, ose to be presently described.

mes B are preferably of substan- form shown, being two in number d on a transverse pivot a^2, which ough the lower ends of the arms the opposite ends of said frame d pivot are mounted the and B^2 on pivots b' and b^2, suit- nted in the ends of said frame. es are each provided with an up- rojecting arm, in which is formed a slot b^3 at a point above the line of the tops of the sheaves B′ and B^2.

The brake-shoe C consists of a block mounted in the way between the arms A′ and the frames B and above the sheaves B′ and B^2. Its upper edge is formed inclined to correspond with the inclined surface *a*′ of the housing A. Its lower edge is curved adjacent to the sheaves to correspond with the circumference thereof and is curved downwardly for a distance between said sheaves. One of the frames B is preferably provided with a series of notches b^4, with which a latch A^3, pivoted on the outside of the adjacent arm A′, is adapted to engage. Said latch is bent at its inner end a^3 to extend across the top of said frame adjacent to said notches. Its end opposite the pivot on which it is mounted being heavier, said latch is normally held from engagement with said notches.

In use the hoisting rope or cable 1 is attached to the pivot-bolt a^2 between the arms B. It is provided with a suitable pulley-block 2, to which the weight W may be attached. Said rope passes through said pulley-block and over the tops of sheaves B′ and B^2 beneath the brake-shoe C, which is provided with projecting pins or lugs *c*, which engage with the slots b^3 of the upper portion of the frames B. The weight being attached and it being desired to hoist the same power is applied to the outer end 1^a of rope 1 until the weight is raised to the desired elevation. Said power being then gradually released the weight operates to tilt the frames B in the direction of said weight, which through the connection between said frames and the brake-shoe carries said brake-shoe toward the inclined surface *a*, against which it impinges and by which it is forced downwardly to impinge tightly against the rope and lock it from movement, and thus will hold said weight at the desired elevation. The power being again applied the frames will be rocked in the reverse direction upon the pivot a^2, automatically elevating the brake-shoe to release its grip from the rope and permitting its free movement in a direction to elevate the weight. When it is desired that the rope shall run freely in a direction to allow the weight to descend, the operator through the

AGES

cord 3, attached to the latch A^2, draws said latch into engagement with one of the notches b^4, which serves to lock the frames B against movement in the direction of the weight and holds the brake-shoe up to permit the free movement of the rope.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A hoisting device comprising a suitable frame or housing, frames mounted on a pivot in said housing and having sheaves pivoted to their outer ends and a brake-shoe mounted between an inclined surface of said housing and the surface of said sheaves and connected with said pivoted frames, substantially as set forth.

2. A hoisting device comprising a suitable housing, pivoted frames in said housing, sheaves carried by said frames, a brake shoe or block mounted to slide in a way between an inclined surface of said housing and the edges of said sheaves and connected with said pivoted frames, substantially as set forth.

3. In a hoisting device, the combination, of the housing, the pivoted frame carrying sheaves mounted therein, a brake or locking block mounted in a way between said sheaves and an inclined surface of said housing, said block being connected with said pivoted frame, substantially as set forth.

4. In a hoisting device, the combination, of the housing, the pivoted fr
sheaves mounted in said hous
brake or block attached to said
and mounted between said sh
inclined surface of said housin
mounted on said housing and a
gage with said pivoted frame to
the weight, substantially as set

5. In a hoisting device, the co
the housing, sheaves carried by
oted in said housing, a sliding,
brake between said sheaves and
housing, and a connection betwe
and said pivoted frame, substa
forth.

6. In a hoisting device, the co
the housing, the pivoted frame
sheaves carried by said frame,
lock connected with said pivote
hoisting-cable running over said
a locking device for holding
frame from rocking on its pivot,
as set forth.

In witness whereof we have h
our hands and seals, at Upper
Ohio, this 10th day of September

JOHN W. JOHNSON.
WILLIAM W. SCARBOROU

Witnesses:
W. R. HARE,
J. W. GRISELL.

TORN P

5
729968.

AGES

No. 729,968. PATENTED JUNE 2,

294

F. W. SMITH.

SELF LOCKING PULLEY.

APPLICATION FILED MAY 24, 1902.

NO MODEL.

Fig. 1

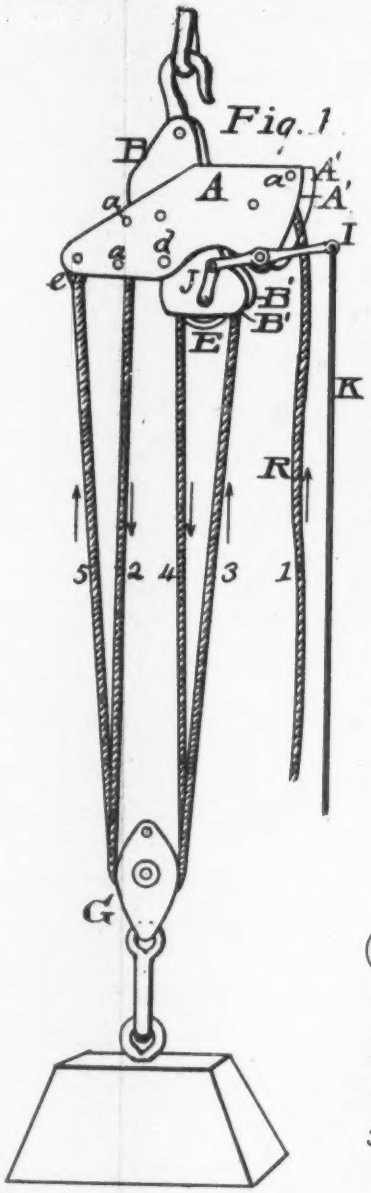


Fig. 3.

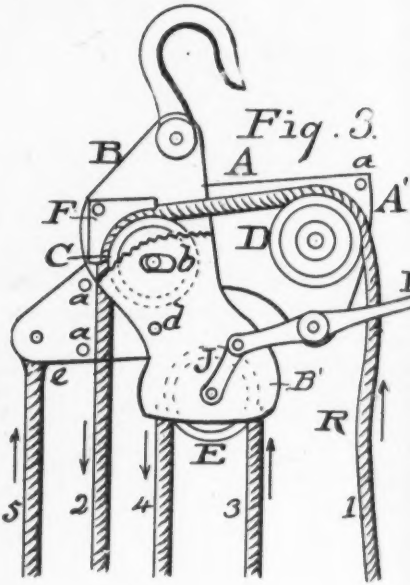
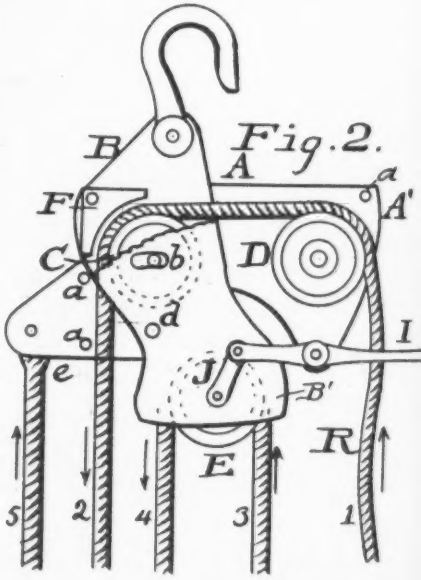


Fig. 2.



Witnesses:

E. A. Tibbitts

N. A. McMann

Inventor

Frederick W. Smith

by Geo. W. Tibbitts Attorney

729,968. Patented June 2, 1903.

UNITED STATES PATENT OFFICE.

FREDERICK W. SMITH, OF CLEVELAND, OHIO.

SELF-LOCKING PULLEY.

SPECIFICATION forming part of Letters Patent No. 729,968, dated June 2, 1903.

Application filed May 24, 1902. Serial No. 108,876. (No model.)

ll whom it may concern:

it known that I, FREDERICK W. SMITH, zen of the United States of America, and dent of Cleveland, in the county of Cuya- and State of Ohio, have invented certain nd useful Improvements in Self-Locking ys, of which the following is a specifica-

is invention relates to self-locking pul- and it consists in an additional improve- on the pulley patented on October 13, and numbered 461,316.

e object of this improvement is to pro- a means for easily and quickly releasing rip on the hoisting-rope; and it consists mbining a trip-lever with the rock-frame g adequate power to release the grip on oisting-rope. It is found in large-sized ys lifting heavy loads that the grip be- s so tightly locked that force is required leasing the grip in order to enable the o be lowered. This is what my improve- is designed to accomplish.

he accompanying drawings, Figure 1 is a levation of the self-locking pulley hav- y improvement attached. Fig. 2 is a levation of the pulley with the side plate ved, showing the locking-grip open. Fig. ike side elevation showing the grip shut. s a pulley-frame consisting of two side A' A', joined together by bolts or riv- *a*.

s a rock-frame consisting of two side B' B', and said rock-frame is fulcrumed frame A at *d*. In said pulley-frame A ovided two sheaves C D, and in the lower f the rock-frame B is a sheave E. The l of sheave C passes through a slot *b* sides of the rock-frame B to allow of a movement of said rock-frame for grip- ping the rope. The rope R is secured at *e* in the end of pulley-frame A and passes down to the pulley-block G, thence up and over the sheave E, thence down again and through block G, then back up again over sheaves C D, thence down for hauling, as indicated by the arrows. In the frame B is provided a segmental gripping-block F, which is used to bear on the rope for gripping the same when required for locking the pulleys and preventing the load from pulling down.

The numerals 1 2 3 4 5 and the arrows indicate the run and direction the rope takes in hauling up.

I is a lever fulcrumed on the side of the frame A below sheave D, having its short end connected by a link J to the journal of sheave E. To the long end of said lever I is attached a rope or cord K, by means of which the lever is pulled upon to release the grip when the grip is too tightly locked for easy unlocking.

Having described my invention, what I claim is—

In a self-locking pulley, the combination with the pulley-frame A and the rock-frame B, fulcrumed together at *d*, sheaves C D journaled in frame A, and the sheave E journaled in frame B, and the grip-block F fixed in frame B, the rope R passing between said sheave C and the grip F, of the lever I fulcrumed on frame A and connected by link J with the rock-frame B, and the cord K arranged to operate substantially as and for the purpose specified.

Signed by me at Cleveland, Ohio, this 23d day of May, 1902.

FREDERICK W. SMITH.

Witnesses:
GEO. W. TIBBITTS,
EDWARD F. SPURNEY.

298

No. 739,986. PATENTED SEPT. 29, 19

L. CHEVENIER.

TACKLE.

APPLICATION FILED DEC. 23, 1902.

NO MODEL. 4 SHEETS—SH

Fig. 1.

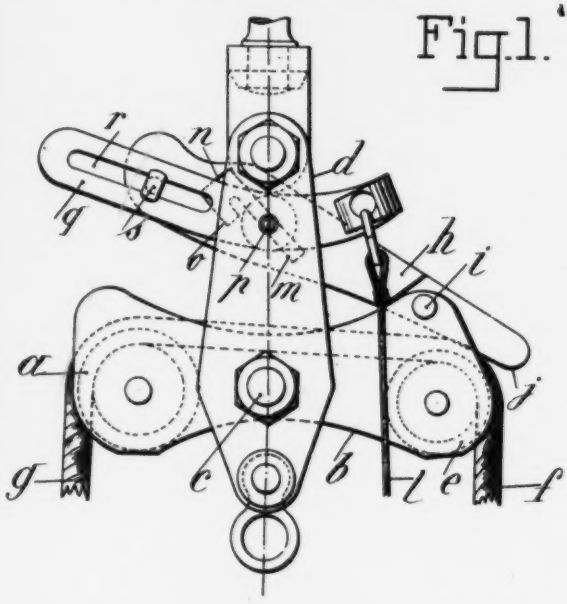
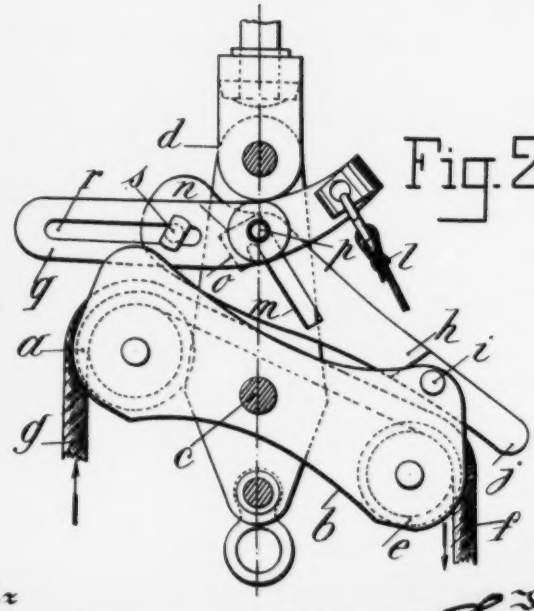


Fig. 2.



Witnesses:
Jas. C. Wolcomith.
Henry E. Everding.

Inventor:
Louis Chevenier
By J. Walter Bro
Attorney

300

No. 739,986. PATENTED SEPT. 29, 19

L. CHEVENIER.

TACKLE.

APPLICATION FILED DEC. 23, 1902.

NO MODEL. 4 SHEETS—SHEE

Fig. 3.

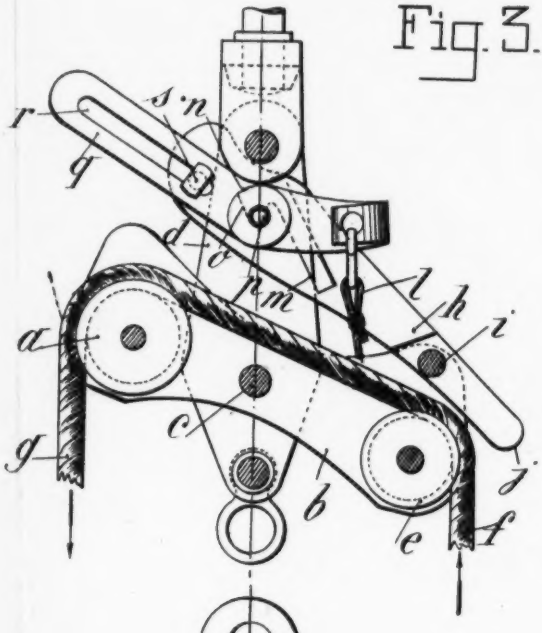
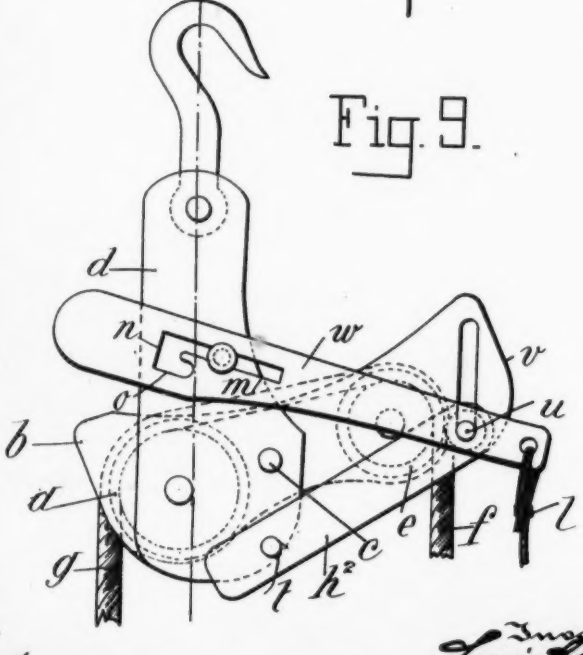


Fig. 9.



Witnesses:
Jos. C. Wolcuewitl
Henry E. Everding.

Inventor
Louis Chevenier
By J. Walter Dunn
Attorney.

302

No. 739,986. PATENTED SEPT. 29, 1

L. CHEVENIER.

TACKLE.

APPLICATION FILED DEC. 23, 1902.

NO MODEL. 4 SHEETS—SHE

Fig. 8.

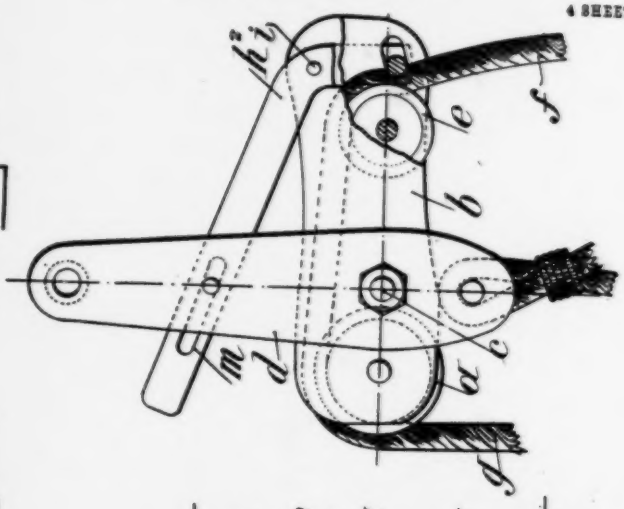


Fig. 5.

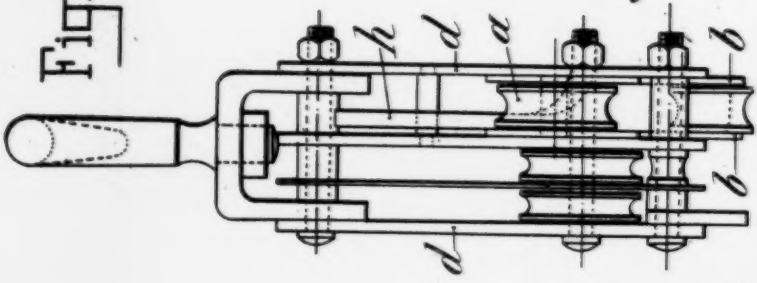
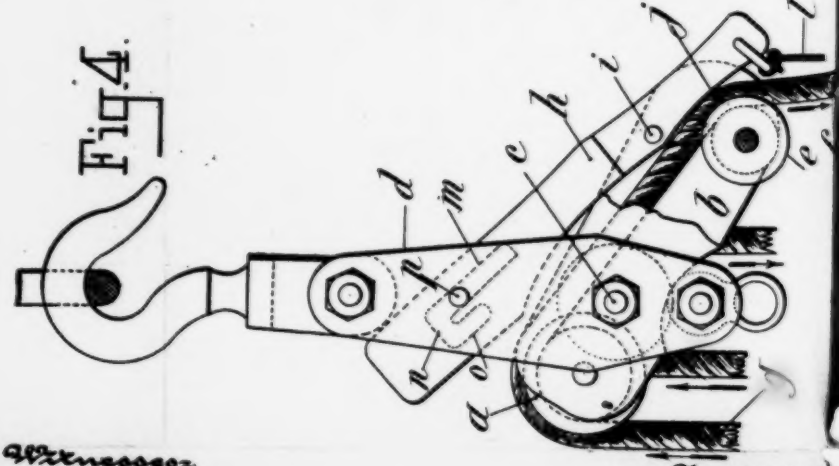


Fig. 4.



Witnesses:
Jas. C. Wormsmith
Henry E. Everding

Inventor
Louis Chevenier
By J. Walter Dr
Attorney

304

No. 739,986. PATENTED SEPT. 29

L. CHEVENIER.

TACKLE.

APPLICATION FILED DEC. 23, 1902.

NO MODEL. 4 SHEETS—

Fig. 10.

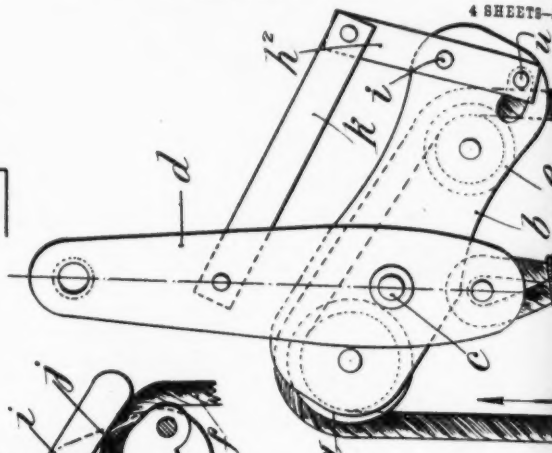


Fig. 7.

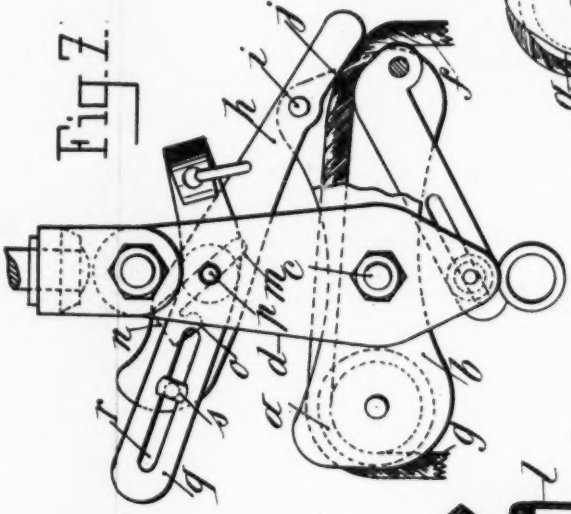
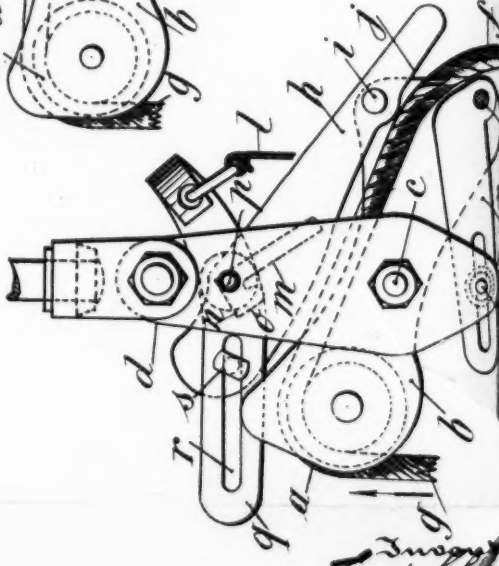


Fig. 6.



Witnesses:
Jas. C. Wormsmith.
Henry E. Evarding.

Inventor
Louis Chevenier
By J. Walter
Attorney

TORN PAGES

Patented September 29, 1903.

UNITED STATES PATENT OFFICE.

LOUIS CHEVENIER, OF ST. SYMPHORIEN DE LAY, FRANCE.

TACKLE.

CIFICATION forming part of Letters Patent No. 739,986, dated September 29, 1903.

Application filed December 28, 1902. Serial No. 136,331. (No model.)

hom it may concern:

known that I, LOUIS CHEVENIER, a f the Republic of France, residing at phorien de Lay, Loire, in the Repub- ance, have invented a new and useful ment in Tackle, which improvement et forth in the following specifica-

nvention has for its object a very sim- y apparatus which is applicable to aving one or several pulleys. The ty apparatus insures that when there ger any strain upon the rope the load, heavy, shall remain in suspension. purpose in place of mounting the last f the upper set of a tackle upon a is I mount the axis at the end of the n of a lever of the first order, which d to the link. From this pulley the sses over the other end of the said on which the stop mechanism acts. in on the hauling-rope and on the sing over the last pulley being sub- y equal and the hauling-rope acting e arm of the lever, which is longer t on which the said pulley is mounted, lating lever will incline to the side of ing-rope when the latter is pulled. It e contrary, raised when the action of becomes the greater from the fact that is no longer hauled. This angular nt is utilized for actuating the safety ment, as will hereinafter be described. annexed drawings the upper system s of several tackles provided with my d arrangement are shown by way of ion.

e 1 is an elevation of a system of pul- he position in which the rope is firmly by the safety arrangement. Fig. 2 e same system of pulleys, the front the link having been removed the of the parts corresponds to when the fted. Fig. 3 is a similar view, partly n, of the same system of pulleys in ion they assume when the load is be- . Figs. 4 and 5 show, respectively, partly in section, and a side eleva- dification of my arrangement as system of three pulleys. Figs. 6 the two positions of another form ty arrangement applicable, prefer- ably, to smooth and greasy ropes. Lastly, Figs. 8, 9, and 10 show three other modifications.

In all figures the same letters indicate the same or analogous parts.

a is the last pulley of the upper set of pulleys. It is mounted at the end of the short arm of the oscillating lever *b*, pivoted at *c* to the link *d*. At the other end of the lever *b* is a small auxiliary pulley *e*, Figs. 1 to 5 and 8 to 10, over which the rope *f* passes. The said pulley may be replaced by a fixed piece, a cross-bar or otherwise, or a movable part for the purpose of increasing the nip on the rope in the position of rest. (See Figs. 6 and 7.)

While the load is being lifted, the strains upon the rope *f* and upon the rope *g*, passing over the pulley *a*, are nearly equal. The lever-arm on which the pulley *e* is mounted being larger than that on which the pulley *a* is mounted, the lever *b* is tilted to the side of the rope *f*; but so soon as the pull on the rope *f* ceases the strain on the rope *g* becomes the greater and raises the oscillating lever *b*. I utilize this angular movement for actuating a stop-lever *h*, pivoted at *i* to the lever *b*. The extremity *j* of said lever nips the rope *f* so soon as the lever *b* is lifted. For this purpose the levers *b* and *h* form with the link *d*, and in some cases with a supplementary piece, (a connecting-rod *k*, Fig. 10,) a polygon, triangle, (with a sliding side,) or quadrilateral figure, which are capable of deformation. When after leaving the apparatus at rest it is wished to continue to raise the load, it is only necessary to haul upon the rope *f* in order to again tilt the lever *b*, remove the lever *h j* from the rope, and thus leave it free to move. When, on the contrary, it is desired to allow the load to descend, it is necessary, first, to place the lever *b* in its inclined position by hauling upon the rope to disengage it, and, second, to prevent the lever *b* from lifting under the influence, which is now the preponderating one, of the load.

In order to maintain the lever *b* in its lowered position, a cord *l* is made use of. It is attached to the stop-lever *h*, Figs. 4 and 5. This arrangement is, however, inconvenient, because as the lever-arm is fairly long there is always risk, on inadvertently pulling the cord, of releasing the rope when there is no strain upon it. The load being no longer re-

tained then descends and may cause grave accidents. I consequently prefer to use the arrangements shown in Figs. 1, 2, 3, 6, and 7, which are applicable more particularly to triangular apparatus capable of deformation. In this arrangement the longer arm of the stop-lever *h* is slotted at *m*, the slot being curved at *n* and provided with a short retreating portion *o*. The slot slides upon the pin *p*, fixed to the link *d*, and allows freedom of movement to the lever *h*, and consequently to the lever *b*, for so long as the said pin *p* does not penetrate into the branch *n* or into the retreating portion *o*; but when by hauling upon *f* the lever *b* is lowered to the point at which the pin *p* is opposite the bend *n* of the slot it is only necessary to lift the lever *h* for the pin to become lodged in the retreating portion *o*, and thus prevent the apparatus from returning into the stop position so soon as the charge commences to descend.

In order to lift the lever *h*, a cord *l* is provided attached to one end of a lever *y*, turning upon the pin *p*. The other arm of the said lever is provided with a slot *r*, in which moves a bolt *s*, fixed to the free end of the lever *h*. As will be seen, it is only necessary to pull the cord *l* in order to lift the lever *h*, but for this purpose it is necessary that the pin *p* shall be at the end of the slot *m*. It will be understood, therefore, that no pull upon the cord *l* can oscillate the lever *b* and disengage the rope *f*, and thus cause the unexpected descent of the load.

In the modification shown in Figs. 4 and 5 the cord *l* acts directly upon the lever *h*, which it also raises when the curved portion of the slot *m* is opposite the pin *p*. In this case again the pin *p*, becoming lodged in the retreating portion *o* of the slot, prevents the lever *b* from being lifted.

Fig. 9 shows a modified arrangement with a triangle capable of distortion in which the slot is formed in the lever *b*. The stop-lever h^2, formed of two thin tongues, is pivoted at *l* to the bottom of the link *d*, and the tie-stud *u*, which joins together the ends of the two tongues, slides in slots *v*, formed in the oscillating lever *b*. When the latter is raised under the greater influence of the load, the pulley *e* (or the portion substituted for it) nips the rope *f* against the tie-stud *u*.

In order to enable the apparatus to be maintained in working position during the descent of the load, an auxiliary lever *w*, to which the cord *l* is attached, is jointed to the stud *u* and is provided with a slot *m*, exactly similar to that in the stop-lever *h* in Figs. 1 to 7. A similar auxiliary lever may be adapted to the quadrilateral apparatus (shown in Fig. 10) in order to produce the same effects, and the said auxiliary lever may also be raised or lowered by a small lever *q*, identical to that shown in Figs. 1, 2, and 3.

In the case in which it is necessary to use very smooth or even greasy cords it may be well to roughen either the throat of the pulley *e* or the portion *j* of the lever *b* which

rope. The pulley *e* may even be rep
a fixed portion, or, again, as shown i
and 7, a second stop-lever *x* may be p
forming, with the lever *b*, a nipper
strongly nips the rope when the
lever is lifted. The lever *x*, which
second order, is pivoted at *y* to the le
is provided with a straight slot whi
upon a pin *z* on the link. If neces
rubbing portion of the lever *x* may
roughened transversely. It will be
in this case there are two triangles w
bined action capable of being distor

The details of construction may b
fied.

Having now particularly described
certained the nature of my said inven
in what manner the same is to be per
I declare that what I claim is—

1. In a tackle provided with a plu
pulleys, a block in the form of a leve
first class supporting at its shorter
last of said pulleys, a link from wh
block is pivotally suspended, a pull
equivalent at the longer arm of the
rope arranged to pass over the pulley
ends of the block, and a nipping bar
pivoted intermediate of its ends in
and pivoted at one end in the leve
adjacent to the pulley in the longer
said block, all arranged so that w
shorter arm of the block descends u
weight of the load on the rope the lon
rises and binds the rope against the
bar or lever.

2. In a tackle, a lever-block pivot
mediate of its ends to a link or su
that the arms of said block are of
length, a pulley over which the rope
ing the load passes, said pulley pivot
shorter arm of said block, a nipping
or piece carried by the longer arm
block and a nipping-lever pivoted
diate of its ends in the link or supp
pivoted at one end in the longer arm
block to form with said link and block
gon between one angle of which t
passes, said polygon arranged to be d
to open or close said angle by the m
of the block in response to either the
pull or the weight of the load upon s

3. In a tackle wherein a rope is a
to pass between an angle of a polygon
by an oscillating block, a link to wh
block is unsymmetrically pivoted an
ping-lever pivoted to the link and
longer arm of said block, a stop-lever a
to control the movement of the nipp
upon its pivotal connection in said li

In testimony whereof I have sig
specification in the presence of two s
ing witnesses.

LOUIS CHEVEN

Witnesses:
PAUL DE MESTREL,
EDWARD P. MACLEAN.

TORN PAGES

No. 809,815. PATENTED JAN. 9,

H. KOORIE.

CLOTHES LINE PULLEY.

APPLICATION FILED MAR. 31, 1905.

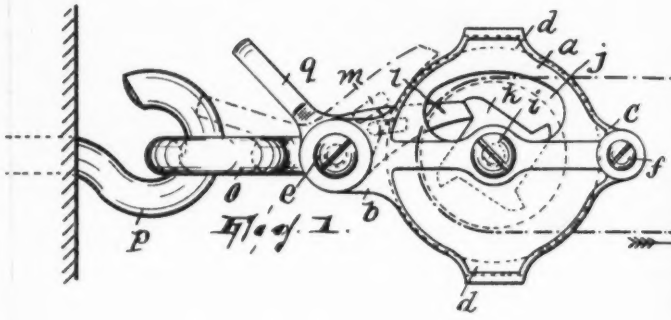


Fig. 1.

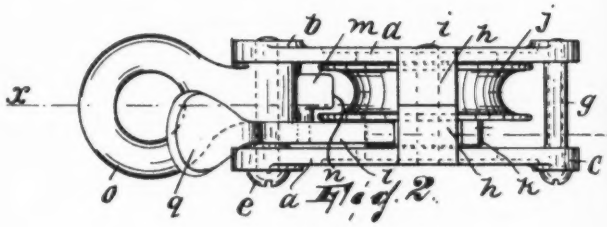


Fig. 2.

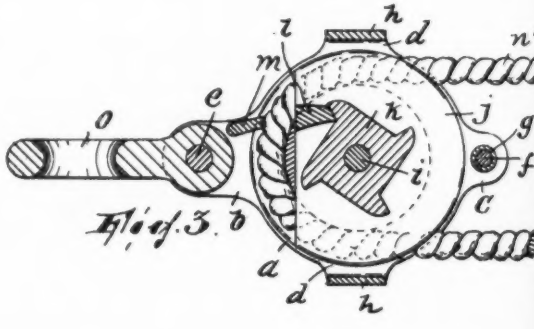


Fig. 3.

WITNESSES:

Wm. D. Bell

Adele Glatt

INVEN

Hann

BY

Gartner

ATTOR

TORN PAGES

UNITED STATES PATENT OFFICE.

HANNA KOORIE, OF PATERSON, NEW JERSEY.

CLOTHES-LINE PULLEY.

0,815. Specification of Letters Patent. Patented Jan. 9, 1906.

Application filed March 31, 1905. Serial No. 253,106.

hom it may concern:

nown that I, HANNA KOORIE, a citi- he United States, residing in Pater- the county of Passaic and State of sey, have invented certain new and provements in Clothes-Line Pulleys; hereby declare the following to be a r, and exact description of the inven- h as will enable others skilled in the hich it appertains to make and use e, reference being had to the accom- drawings, and to letters of reference thereon, which form a part of this tion.

nvention relates to clothes-line pul- l has for its object to provide a de- nis nature with means for preventing he pulley proper from rotating ex- ne direction and the rope from slip- the pulley under the weight of the

se of the ordinary clothes-line pulley he pulley proper is free to rotate in rection is accompanied with no little nience, not to say some element of n that in drawing in the line weight- by the clothes or garments attached there is no means for securing the nst a reverse movement each time a ard the operator is exerted on the

e accomplished the foregoing object ple, practical, and inexpensive way, e seen from the following description ght of the accompanying drawings, latter the pulley is seen in Figure 1 elevation, in Fig. 2 in plan, and in section, the section being taken on x in Fig. 2.

ulley-block comprises two plates *a* ntially circular form, having radial ding projections *b c* and *d d*, the s *b* and *c* of the two plates being d by screws *e* and *f*. A sleeve *g* on rranged between projections *c*, and lugs *h*, formed integrally with projections *d* and abutting against each other when the parts are assembled; space the plates *a a*.

i is a screw which forms a spindle or bearing for the pulley *j*, said screw being mounted centrally in the plates *a*. On one face of the pulley is a ratchet *k*.

l is a pawl which is pivoted on screw *e* and is arranged to engage the ratchet *k*. On the side of said pawl adjacent the pulley is a rigid dog *m*, whose edge *n* when the pawl is engaged by the ratchet projects somewhat into the groove of the pulley. Thus while the pulley is held by the pawl from turning under the pull of the rope *n'* in the direction of the arrow in Fig. 1 the rope is also held from slipping in the same direction by the dog *m;* but the rope may be freely pulled in the opposite direction, so as to draw in the clothes.

o is the usual eyelet pivoted on screw *e* for attaching the device to a hook or the like *p*.

q is a thumb-piece forming a part of pawl *l* and so projecting over eyelet *o* that it acts to limit the movement of the pawl when thrown back.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, in a clothes-line pulley, of the pulley-block, the pulley proper journaled therein, a pawl-and-ratchet connection between the pulley-block and the pulley proper, and a rope-holding dog carried by the pawl and projecting into proximity to the perimeter of the pulley, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of November, 1903.

HANNA KOORIE.

Witnesses:
JOHN W. STEWARD,
JACOB TURPANGY.

No. 811,440. PATENTED JAN. 30,

312

W. F. ROBERTS.

BLOCK.

APPLICATION FILED MAY 5, 1905.

Fig. 1.

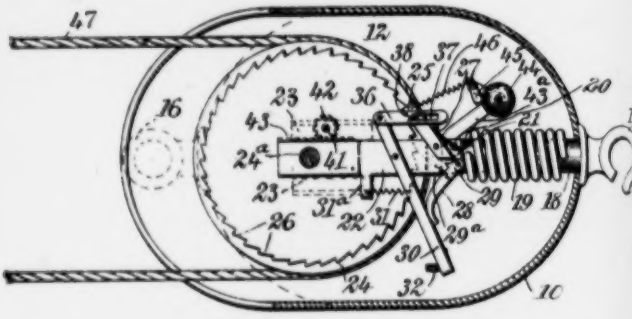


Fig. 2.

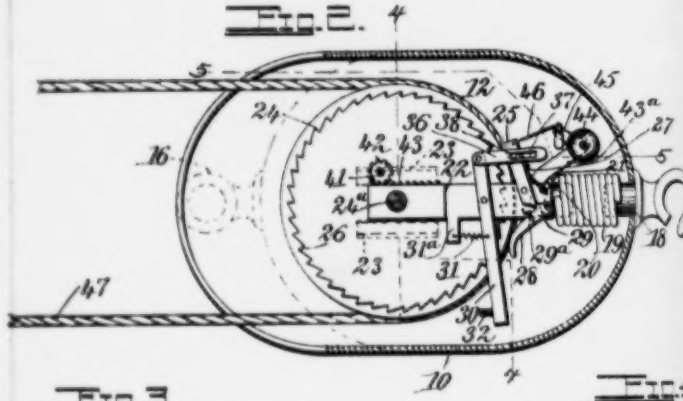
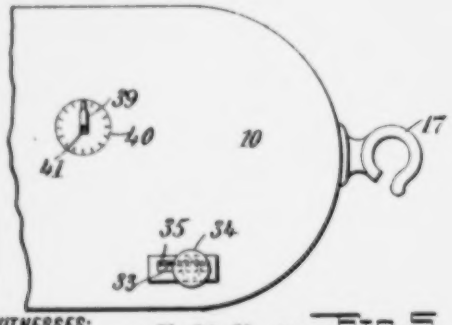
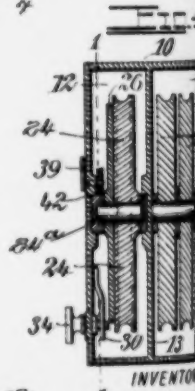


Fig. 3.

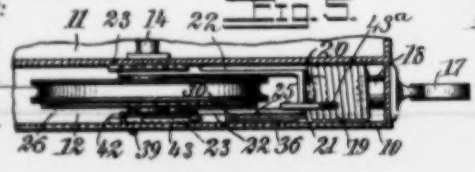




WITNESSES:

L Almquist

Fig. 5.



INVENTO

William

BY

Mu

AT

TORN PAGES

UNITED STATES PATENT OFFICE.

WILLIAM FRANCIS ROBERTS, OF NASHVILLE, TENNESSEE.

BLOCK.

1,440. Specification of Letters Patent. Patented Jan. 30, 1906.

Application filed May 5, 1905. Serial No. 259,056.

hom it may concern:

known that I, WILLIAM FRANCIS s, a citizen of the United States, and nt of Nashville, in the county of Da- nd State of Tennessee, have invented nd Improved Block, of which the fol- s a full, clear, and exact description. vention relates to blocks used in con- with tackle, and more particularly to dapted for the tightening of conduc- carrier or guy wires in line construc-

for its principal objects the provision k which is automatically locked upon blishment of a definite tension in the which it is applied, this being capable tion, and which will give an indica- he existence of the lock.

ence is to be had to the accompany- wings, which form a part of this speci- in which like reference characters like parts in the several views.

e 1 is a longitudinal section through bodiment of my invention, it being n the line 1 1 of Fig. 4, the elements hown in their relation when the lock lished. Fig. 2 is a similar view with ts in their normal position. Fig. 3 is n side elevation of the block. Fig. 4 nsverse section on the line 4 4 of Fig. Fig. 5 is a longitudinal section on the of Fig 2.

signates the casing or supporting por- the block, this being here shown as ing two sections or chambers 11 and arated by a partition 13. In the r 11 is mounted a spindle 14, about ay rotate sheaves or pulleys 15 15, as in devices of this character. The rrounding the chamber 11 is of less an that about the companion cham- preferably carries an eye 16, which used in the ordinary manner to con- blocks when arranged in multiple.

the c sing at the end of the chamber site t e eye 16 projects a hook 17 for the work. From the hook mber 12 projects a portion 18, d by a spring 19 to an extension ne 21. This frame has opposite 22 and is mounted to move bodily asing in ways 23. Between the side bars is a sheave 24, rotatable upon a spindle 24ª.

Associated with the movable frame is locking mechanism, which, as illustrated, comprises a latch 25, pivoted upon the outside of one of the side bars and which is movable into engagement with ratchet-teeth or locking projections 26, surrounding one side of the sheave 24 near its periphery. A spring 27, which, as shown, is of the leaf type, is fixed upon the side bar adjacent to the latch and exerts its force to press said latch toward the teeth. Pivoted upon the frame is a dog 28, having a projection 29, which may be drawn into contact with the latch by a spring 29ª to hold it out of engagement with the teeth. Fulcrumed upon the frame at the inner side of the latch and dog is a lever 30, lying in the same plane as the end of the dog opposite the projection and normally held out of contact therewith by a spring 31, extending between the lever and a projection 31ª from the side bar. Mounted upon the casing at the side adjacent to this locking mechanism is a contact member 32, preferably in the form of a pin extending through a slot 33 and having its end outside the casing threaded to receive a clamping-nut 34. This nut is shown as movable along a scale 35, which may be graduated in pounds or other units showing the tension exerted. The extremity of the lever 30 opposite this contact member has articulated to it a setting-link 36, in which is a longitudinal slot 37 to receive a pin 38, projecting from the latch. When the elements are in the position illustrated in Fig. 2 of the drawings, an inward movement of the link is permitted without operative contact with the pin; but when the parts have the relation shown in Fig. 1 an outward movement of the link serves to restore the latch to its coöperation with the dog.

Means are preferably provided for giving a visible and audible indication of the tension applied to the apparatus and the existence of the lock. The former may consist of a pointer or hand 39, movable over a dial 40 and supported upon a spindle 41, journaled in the side wall of the casing. At its inner end this spindle has fixed upon it a pinion 42, meshing with a rack 43, carried by one of the side bars of the frame. As in the scale, this

dial may be graduated in pounds, the hand occupying a zero position when the elements are in the position shown in Fig. 2. Fixed to an arm 43ª, projecting from the frame 21, is a bell 44, which may be struck by a hammer 45, pivoted adjacent to it, and connected by a spring 46 with the latch. When the latch is released from the dog and moves into engagement with the sheave-teeth, the bell is struck by the hammer.

In use the hook of the block is attached to the wire to be drawn tight by means of a suitable clamp and a rope 47, surrounding the sheaves, connected at one end to a fixed object in the usual manner, while force is applied to the other end. As the slack is taken up under the application of this force the spring 19 will expand, allowing the frame and the locking mechanism carried thereby to move toward the contact member, which is adjusted at such a point upon the scale as to secure action at the desired tension. When such a condition of tension is approached in the spring, the lever 30 will have reached the contact member and is moved thereby into coöperation with the dog. This is swung to one side, releasing the latch, which is forced by its spring into contact with the sheave-teeth, locking it against further rotation. At this time and at any other time during the movement the amount of tension exerted will be indicated upon the dial, and the locking tension will be registered until the parts are restored to their normal position. When the rotation of the sheave is stopped by the locking mechanism, the users will naturally cease pulling upon the operating-rope; but an oversight in this direction is guarded against and they are warned more positively of the existence of the lock by the stroke of the bell, this having been given when the latch was released. After the wire operated upon is secured and the rope slackened off the spring 19 restores the frame to its initial position. This carries the lever out of engagement with the contact member and returns it to the position shown in Fig. 2. This movement presses the inner end of the slot in the setting-link against the latch-pin, forcing it back against its spring until it is caught by the dog. If in using my improved block it is desired to exert a greater or less degree of tension before the lock is applied, the contact member is adjusted along its slot to the proper position, as is indicated by the scale. This moves it with relation to the lever, it therefore requiring a greater or less extension of the spring 19 to bring these elements into coöperation.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A block comprising a casing, a rotatable sheave bodily movable in the casing, and means for locking the sheave against rotation after a definite bodily movement.

2. A block comprising a casing, ble sheave bodily movable in the cas for resisting this movement of the sh means for locking the sheave again after a certain amount of resistance overcome.

3. A block comprising a casing, ble sheave bodily movable in the c means operable by the bodily mov locking the sheave against rotation.

4. A block comprising a casing, ble sheave bodily movable in the cas for locking the sheave against rot a definite bodily movement, and varying the range of effective mov

5. A block comprising a casing movable therein, a sheave journa frame and having locking projec locking mechanism mounted upon and coöperating with the projec with an element carried by the cas

6. A block comprising a casing movable therein, a sheave journa frame and having locking projec ing mechanism mounted upon the coöperating with the projections, tact member movable upon the which may be engaged by the loc anism.

7. A block comprising a casing, ble sheave bodily movable in the cas for locking the sheave against rot a definite bodily movement, and signal operable by the locking me

8. A block comprising a casing, ble sheave bodily movable in the cas for resisting this movement of t means for locking the sheave again after a certain amount of resistanc overcome, and an audible signa when the sheave is locked.

9. A block comprising a casing, ble sheave bodily movable in the cas for locking the sheave against rot a definite bodily movement, and operable by the bodily movem sheave.

10. A block comprising a casing ble sheave bodily movable in the cas for resisting this movement of t means for locking the sheave again after a certain amount of resistanc overcome, and means for indicat sistance overcome.

11. A block comprising a casing movable therein, a sheave rotata frame and having teeth, a latch engage the teeth, a dog for the la fulcrumed upon the frame an with the dog, and a contact m by the casing and situated in lever.

12. A block comprising a ca movable therein, a sheave rota frame and having teeth, a latch

teeth, a dog for the latch, a lever upon the frame and coöperating og, a setting-link connecting the le- tch, and a contact member carried ing and situated in the path of the

mony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM FRANCIS ROBERTS.

Witnesses:
EDWIN M. BOND,
JAMES H. PARKES.

TORN PAGES

No. 835,780. PATENTED NOV. 1

A. P. BOYER.

CARRIER.

APPLICATION FILED MAY 20, 1905.

2 SHEET

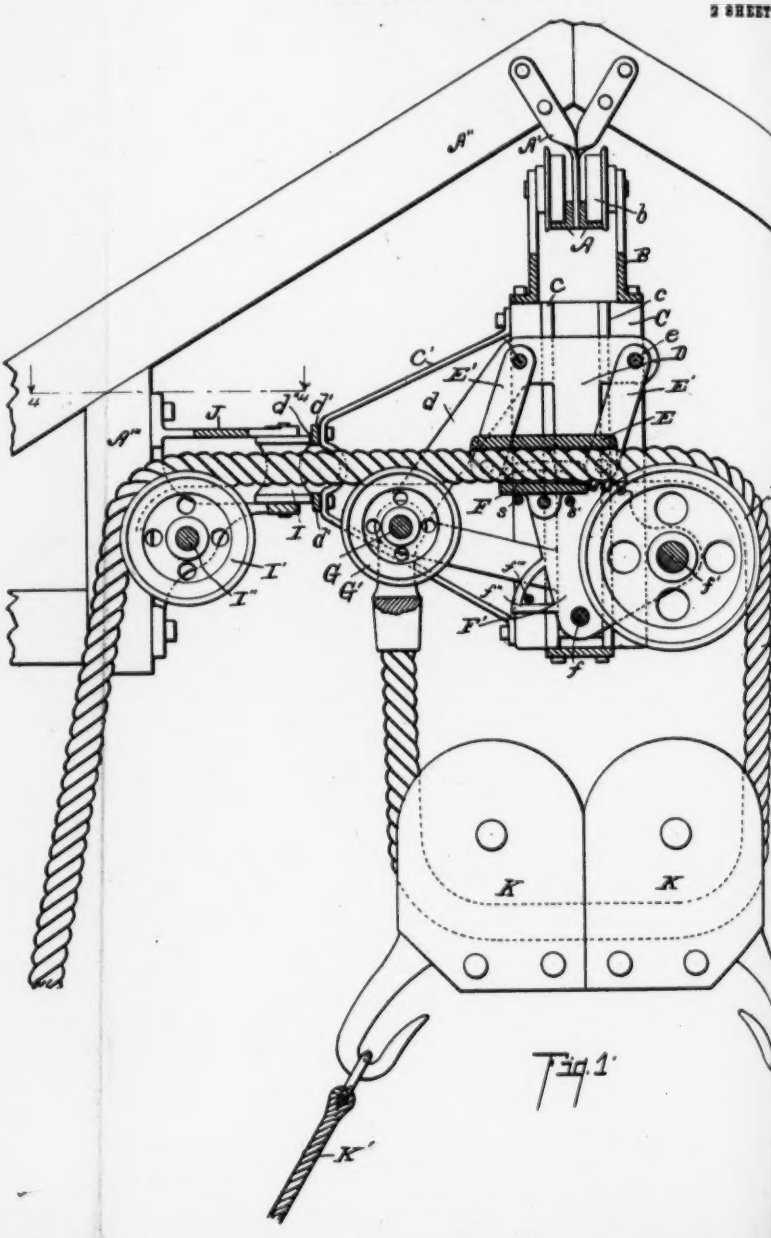


Fig. 1.

Witnesses:

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Allen P. B

By Chappel

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TORN PAGES

No. 835,780. PATENTED NOV.

A. P. BOYER.

CARRIER.

APPLICATION FILED MAY 20, 1905.

2 SHEET

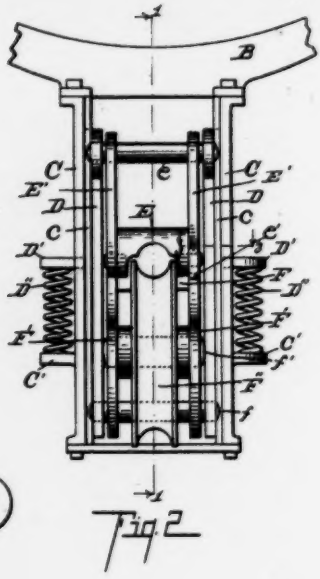

Fig. 2

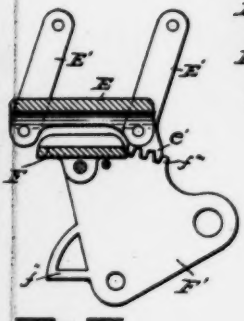

Fig. 5

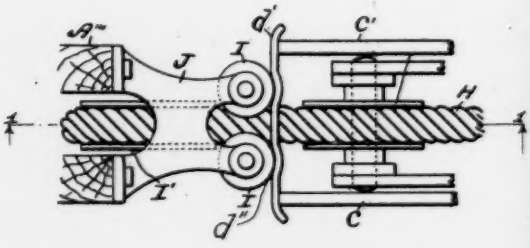

Fig. 4

Witnesses:

Ulrich J. Adams

W. C. Margeson

Inve

Allen P.

By Chappe

Att'

TORN PAGES

UNITED STATES PATENT OFFICE.

ALLEN P. BOYER, OF GOSHEN, INDIANA.

CARRIER.

835,780. Specification of Letters Patent. Patented Nov. 13, 1906.

Application filed May 20, 1905. Serial No. 261,397.

ll whom it may concern:

it known that I, ALLEN P. BOYER, a n of the United States, and a resident of ity of Goshen, in the county of Elkhart State of Indiana, have invented certain and useful Improvements in Carriers, of h the following is a specification.

is invention relates to improvements in ers.

e objects of this invention are, first, to ide in a carrier an improved automatic h for the power or hoisting rope; second, ovide in a carrier an improved support for when in its inner or hoisting posi- and, third, to provide in a carrier an oved guide for the power or hoisting

rther objects and objects relating to tural details will definitely appear from letailed description to follow.

ccomplish the objects of my invention he devices and means described in the wing specification.

e invention is clearly defined and point- t in the claims.

structure embodying the features of my ntion is clearly illustrated in the accom- ing drawings, forming a part of this ification, in which—

gure 1 is a detail transverse vertical sec- of a structure embodying the features of nvention, taken on a line corresponding ne 1 1 of Figs. 2 and 4, the hoisting-rope ves and the pulley-blocks K K being n in full lines. Fig. 2 is a detail side ele- on view looking from the right hand of 1. Fig. 3 is a detail sectional view n on a line corresponding to line 3 3 of 2. Fig. 4 is a detail sectional view n on a line corresponding to line 4 4 of 1. Fig. 5 is a vertical sectional view of clutch blocks or members E and F with r supports removed from the frame, n on a line corresponding to the sectional s of Fig. 1.

n the drawings the sectional views are n looking in the direction of the little ar- at the ends of the section-lines, and simi- letters of reference refer to similar parts out the several views.

Referring to the drawings, the track A is wn suspended from the rafters A″ of a lding by hangers A′. This track may be ny desired form or construction, but I er to use angle-iron, as is illustrated. carriage C is suspended from the track by the arms B, on the upper ends of which are carrying-wheels *b*. Arranged within the carriage is a frame D, adapted to reciprocate vertically therein. The carriage is provided with suitable vertical ways *c* for the reciprocating frame. The reciprocating frame is held normally upward by the springs D″. These springs are supported by the outwardly-projecting lugs C′ on the carriage and engage the outwardly-projecting lugs D′ of the reciprocating frame.

A pair of clutch blocks or members E and F are carried by the reciprocating frame. The upper clutch block or member E is secured to the frame by means of downwardly and forwardly inclined links E′. These links are secured to the reciprocating frame by means of pivot-rods *e*. (See Figs. 1 and 2.) The lower clutch block or member F is carried by the rocking frame F′, which is pivotally supported by the pivot-rod *f*. The clutch member F is pivotally mounted on this rocking frame F′. Stops *s s′* are provided to limit the movement of the clutch member F on its carrying-frame. (See Figs. 1 and 2.) The clutch member F is arranged on the frame F′ in such a relation to its pivot-point that when the frame is rocked rearwardly the clutch member is thrown upwardly. By pivoting the clutch member F on its carrying-frame it retains its proper relation to the clutch member E whatever the position of the frame F′ may be, so that its entire length engages the rope. This, however, is not essential to securing desirable results, although it is of advantage.

The clutch members are operatively connected, by means of the teeth *f*″″, on the frame F′, and the teeth *e′* on one of the rear links E′, which support the clutch member E. With the parts thus connected when they are thrown forward they are positively retracted from each other, and when they are thrown rearwardly they are positively forced together to engage the rope. The sheave F″ is carried by the frame F′. The journal-pin *f′* of this sheave is arranged to the rear of the pivot-pin *f* of the frame, so that when weight is applied thereto the tendency is to rock the frame rearwardly. When, however, power is applied to the hoisting-rope, the tendency is to rock the frame forward, thus releasing the clutch members.

In operation the power or hoisting rope H is secured to the forwardly-projecting arm *d* of the reciprocating frame. It is then rove

over the sheaves of the pulley-blocks K, thence over the sheave F″, from whence it is arranged through the clutch and over the guiding-sheave G′, the journal-pin G of which is carried by the forwardly-projecting arm *d* of the frame D to the guide-sheave I″.

To relieve the carriage from lateral strain when in the hoisting position, a rest is provided. This rest is mounted upon the frame A‴, secured to the rafters A″. The rest consists of a bracket J, having a pair of vertically-arranged rollers I, which engage the shoe *d*′, which is carried by the projecting arm or bracket *c*′ on the carriage. (See Figs. 1 and 4.) The hoisting-rope is passed between the rollers, so that when power is applied thereto the parts are guided into and held in their proper position. The shoe *d*′ is preferably provided with suitable seats *d*″, adapted to receive the rollers I when a load is being hoisted. From the rollers I the hoisting-rope passes over the guide-sheave I′, which is mounted on a suitable journal I″, carried by the bracket J. In the lifting of a load the reciprocating frame D is forced downwardly against the tension of the springs D″. Owing to the toggle relation of the supports E′ and F′ of the clutch blocks or members, the hoisting-rope H has an unrestricted forward movement, but is locked against backward movement so long as the carrier is carrying a sufficient load to overcome the tension of the springs D″, the clutch parts being shown in their engaging position in Fig. 1 of the drawings. These springs are of sufficient strength to carry the parts in their unloaded state, so that the clutch members are then out of engaging relation. To insure the disengagement of the clutch members, a loop-like stop *f*″ is provided on the forward part of the clutch-carrying frame F′, which stop engages the rod *f*‴. Thus arranged, as the frame D is forced upwardly the frame F′ is rocked forwardly on its pivot. This rocking movement, it is apparent, retracts the clamping members and frees the rope, so that it may be passed freely in either direction.

I have illustrated my improved carrier in connection with a pair of running-blocks K K, to which the load-securing ropes K′ are shown attached. It is evident that the operation of the clutch proper would be the same with a single running-block or if the rope was attached directly to the load.

By arranging the parts as I have illustrated and described I secure a clutch device which permits perfect freedom of movement of the hoisting-rope and at the same time automatically locks it, so that the load may be stopped at any point during its elevation.

While I have especially adapted the locking features to a carrier for use as a hay-carrier or the like, it is evident that they are applicable for use in other relations.

My improved carrier is comparatively simple in structure, and at the same very effective. The parts are ar that the strain thereon is reduced mum. While I have illustrated th the form preferred by me, I am a the structure may be considerably details without departing from t tion, and I desire to be understood ing the same broadly, as well as s as illustrated.

Having thus described my inven I claim as new, and desire to secu ters Patent, is—

1. The combination with a trac riage; vertically-arranged ways o riage; a reciprocating frame arran ways; lugs on said carriage; spri thereon; lugs on said reciprocat arranged to rest upon said spring said reciprocating frame is held no ward; an upper clutch member; inclined depending supporting-li for, carried by said reciprocating lower-clutch-member-carrying oted on said reciprocating frame clutch member pivoted on said frame at a point in front of its pi for limiting the movement of clutch member on its pivot; a to nection for said clutch members; the forward part of said lower-cl ber-carrying frame; a sheave m said lower-clutch-member-carryin the rear of its pivot-point; a forw jecting arm on said reciprocating guide-sheave carried by said arm a guide the hoisting-rope to said cl bers; a shoe carried by said bracket; a pair of vertically-arran adapted to engage the said shoe carriage is in its inner position; a sheave arranged in front of said coacting for the purpose specified.

2. The combination with a trac riage; vertically-arranged ways o riage; a reciprocating frame arran ways; lugs on said carriage; spri thereon; lugs on said reciprocati arranged to rest upon said spring said reciprocating frame is held no ward; an upper clutch member; inclined depending supporting-li for, carried by said reciprocating lower-clutch-member-carrying oted on said reciprocating frame clutch member pivoted on said frame at a point in front of its toothed connection for said clutch a stop on the forward [illegible] clutch-member-carrying[illegible]ed. mounted on said lower-cl[illegible] ing frame at the rear o[illegible]age; ve forwardly-projecting arm ing frame; a guide-sheave arm arranged to guide t[illegible]

5. The

members; a shoe carried by said bracket; a pair of vertically-llers adapted to engage the said aid carriage is in its inner posi-guide-sheave arranged in front of ll coacting for the purpose speci-

mbination with a track of a car-ally-arranged ways on said car-procating frame arranged in said on said carriage; springs seated s on said reciprocating frame, rest upon said springs, whereby cating frame is held normally up-per clutch member; forwardly-pending supporting-links there-by said reciprocating frame; a n-mei.ber-carrying frame piv-d reciprocating frame; a lower ber mounted on said carrying-point in front of its pivot; a nection for said clutch members; he forward parts of said lower-ber-carrying frame; a sheave said lower-clutch-member-carry-the rear end of its pivot-point; projecting arm on said recipro-; a guide-sheave carried by said d to guide the hoisting-rope to members; a shoe carried by said bracket; a pair of vertically-ar-rs adapted to engage the said aid carriage is in its inner posi-guide-sheave arranged in front of ll coacting for the purpose speci-

mbination with a track of a car-ally-arranged ways on said car-procating frame arranged in said on said carriage; springs seated s on said reciprocating frame, rest upon said springs, whereby cating frame is held normally up-per clutch member; forwardly-pending supporting-links there-by said reciprocating frame; a h-member-carrying frame piv-d reciprocating frame; a lower ber pivoted on said carrying-point in front of its pivot; stops the movement of said lower ber on its pivot; a toothed con-said clutch members; a stop on part of said lower-clutch-mem-frame; a sheave mounted on clutch-member-carrying frame at its pivot-point; a shoe carried by e; a bracket; a pair of vertically-llers adapted to engage the said aid carriage is in its inner posi-guide-sheave arranged in front of rs, all coacting for the purpose speci-

combination with a track of a car-rtically-arranged ways on said car-riage; a reciprocating frame arranged in said ways; lugs on said carriage; springs seated thereon; lugs on said reciprocating frame, arranged to rest upon said springs, whereby said reciprocating frame is held normally upward; an upper clutch member; forwardly-inclined depending supporting-links therefor, carried by said reciprocating frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame at a point in front of its pivot; a toothed connection for said clutch members; a stop on the forward part of said lower-clutch-member-carrying frame; a sheave on said lower-clutch-member-carrying frame at the rear of its pivot-point; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

6. The combination with a track of a carriage; vertically-arranged ways on said carriage; a reciprocating frame arranged in said ways; lugs on said carriage; springs seated thereon; lugs on said reciprocating frame, arranged to rest upon said springs, whereby said reciprocating frame is held normally upward; an upper clutch member, forwardly-inclined depending supporting-links therefor, carried by said reciprocating frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member mounted on said carrying-frame at a point in front of its pivot; a toothed connection for said clutch members; a stop on the forward part of said lower-clutch-member-carrying frame; a sheave mounted on said lower-clutch-member-carrying frame at the rear of its pivot-point; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

7. The combination with a track of a carriage; vertically-arranged ways on said carriage; a reciprocating frame arranged in said ways; lugs on said carriage; springs seated thereon; lugs on said reciprocating frame arranged to rest upon said springs, whereby said reciprocating frame is held normally upward; an upper clutch member; forwardly-inclined depending supporting-links therefor, carried by said reciprocating frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame at a point in front of its pivot; stops for limiting the movement of said lower clutch member on its pivot; a sheave mounted on said lower-clutch-member-carrying

frame at the rear of its pivot-point; a forwardly-projecting arm on said reciprocating frame; a guide-sheave carried by said arm arranged to guide the hoisting-rope to said clutch members; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

8. The combination with a track of a carriage; vertically-arranged ways on said carriage; a reciprocating frame arranged within said ways; lugs on said carriage; springs seated thereon; lugs on said reciprocating frame, arranged to rest upon said springs, whereby said reciprocating frame is held normally upward; an upper clutch member; forwardly-inclined depending supporting-links therefor, carried by said reciprocating frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame at a point in front of its pivot; a sheave mounted on said lower-clutch-member-carrying frame at the rear of its pivot-point; a forwardly-projecting arm on said reciprocating frame; a guide-sheave carried by said arm arranged to guide the hoisting-rope to said clutch members; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

9. The combination with a track of a carriage; vertically-arranged ways on said carriage; a reciprocating frame arranged in said ways; lugs on said carriage; springs seated thereon; lugs on said reciprocating frame, arranged to rest upon said springs, whereby said frame is held normally upward; an upper clutch member; forwardly-inclined depending supporting-links therefor, carried by said reciprocating frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member mounted on said carrying-frame at a point in front of its pivot; a sheave mounted on said lower-clutch-member-carrying frame at the rear of its pivot-point; a forwardly-projecting arm on said reciprocating frame; a guide-sheave carried by said arm arranged to guide the hoisting-rope to said clutch member; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

10. The combination with a track of a carriage; vertically-arranged ways on said carriage; a reciprocating frame arra
ways; lugs on said carriage; sp
thereon; lugs on said reciproca
arranged to rest upon said spri
said reciprocating frame is held n
ward; an upper clutch member;
inclined depending supporting-li
carried by said reciprocating fra
clutch-member-carrying frame
said reciprocating frame; a lo
member pivoted on said carryin
point in front of its pivot; stops
the movement of said lower clu
on its pivot; a sheave mount
lower-clutch-member-carrying f
rear of its pivot-point; a shoe ca
carriage; a bracket; a pair of v
ranged rollers adapted to enga
shoe when said carriage is in its
tion; and a guide-sheave arrange
said rollers, all coacting for t
specified.

11. The combination with a tr
riage; vertically-arranged ways
riage; a reciprocating frame arra
ways; lugs on said carriage; sp
thereon; lugs on said reciproca
arranged to rest upon said spri
said reciprocating frame is held n
ward; an upper clutch member;
inclined supporting-links therefo
said reciprocating frame; a lo
member-carrying frame pivoted
ciprocating frame; a lower clut
pivoted on said carrying-frame a
front of its pivot; a sheave mou
lower-clutch-member-carrying f
rear of its pivot-point; a shoe ca
carriage; a bracket; a pair of v
ranged rollers adapted to enga
shoe when said carriage is in its
tion; and a guide-sheave arrang
of said rollers, all coacting for t
specified.

12. The combination with a tr
riage; vertically-arranged ways
riage; a reciprocating frame arra
ways; lugs on said carriage; sp
thereon; outwardly-projecting l
reciprocating frame, arranged t
said springs, whereby said r
frame is held normally upward
clutch member; forwardly-inclin
ing supporting-links therefor, ca
reciprocating frame; a lower-clut
carrying frame pivoted on said r
frame; a lower clutch member
said carrying-frame at a point i
pivot; a sheave mounted on
clutch-member-carrying frame
its pivot-point; a shoe carried lu
riage; a bracket; a pair of
ranged rollers adapted to e
shoe when said carriage is in

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a guide-sheave arranged in front of
rs. all coacting for the purpose

e combination with a track of a car-
eciprocating frame; springs for re-
aid reciprocating frame to its nor-
ion; an upper clutch member mov-
nted on said frame; a lower-clutch-
arrying frame pivoted on said re-
g frame; a lower clutch member
n said carrying-frame; stops for
he movement of said lower clutch
n its pivot; a toothed connection
lutch members; a stop on the for-
of said lower-clutch-member-carry-
; a sheave mounted on said lower-
mber-carrying frame; a forwardly-
arm on said reciprocating frame; a
ve carried by said arm arranged to
hoisting-rope to said clutch mem-
hoe carried by said carriage; a
pair of vertically-arranged rollers
o engage the said shoe when said
s in its inner position; and a guide-
ranged in front of said rollers, all
or the purpose specified.

e combination with a track of a car-
eciprocating frame; springs for re-
aid reciprocating frame to its nor-
ion; an upper clutch member mov-
nted on said frame; a lower-clutch-
arrying frame pivoted on said re-
g frame; a lower clutch member
n said carrying-frame; a toothed
n for said clutch members; a stop
rward part of said lower-clutch-
arrying frame; a sheave mounted
wer-clutch-member-carrying frame;
ly-projecting arm on said recipro-
me; a guide-sheave carried by said
nged to guide the hoisting-rope to
h members; a shoe carried by said
a bracket; a pair of vertically-ar-
llers adapted to engage the said
n said carriage is in its inner posi-
a guide-sheave arranged in front of
s, all coacting for the purpose speci-

e combination with a track of a car-
eciprocating frame; springs for re-
aid reciprocating frame to its nor-
ion; an upper clutch member mov-
nted on said frame; a lower-clutch-
arrying frame arranged on said re-
g frame; a lower clutch member
n said carrying-frame; a toothed
n for said clutch members; a stop
rward part of said lower-clutch-
arrying frame; a sheave mounted
wer-clutch-member-carrying frame;
ly-projecting arm on said recipro-
rame; a guide-sheave carried by said
anged to guide the hoisting-rope to
tch members; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

16. The combination with a track of a carriage; a reciprocating frame; springs for returning said reciprocating frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; stops for limiting the movement of said lower clutch member on its pivot; a toothed connection for said clutch members; a stop on the forward part of said lower-clutch-member-carrying frame; a sheave mounted on said lower-clutch-member-carrying frame; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

17. The combination with a track of a carriage; a reciprocating frame; springs for returning said reciprocating frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; a toothed connection for said clutch members; a stop on the forward part of said lower-clutch-member-carrying frame; a sheave mounted on said lower-clutch-member-carrying frame; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

18. The combination with a track of a carriage; a reciprocating frame; springs for returning said reciprocating frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame arranged on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; a toothed connection for said clutch members; a stop on the forward part of said lower-clutch-member-carrying frame; a sheave mounted on said lower-clutch-member-carrying frame; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

19. The combination with a track of a carriage; a reciprocating frame; springs for re-

turning said reciprocating frame to its normal position; an upper clutch member; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; stops for limiting the movement of said lower clutch member on its pivot; a sheave mounted on said lower-clutch-member-carrying frame; a forwardly-projecting arm on said reciprocating frame; a guide-sheave carried by said arm arranged to guide the hoisting-rope to said clutch members; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

20. The combination with a track of a carriage; a reciprocating frame; springs for returning said reciprocating frame to its normal position; and a clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; a sheave mounted on said lower-clutch-member-carrying frame; a forwardly-projecting arm on said reciprocating frame; a guide-sheave carried by said arm, arranged to guide the hoisting-rope to said clutch members; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

21. The combination with a track of a carriage; a reciprocating frame; springs for returning said reciprocating frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame arranged on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; a sheave mounted on said lower-clutch-member-carrying frame; a forwardly-projecting arm on said reciprocating frame; a guide-sheave carried by said arm; arranged to guide the hoisting-rope to said clutch members; a shoe carried by said carriage; a bracket; a pair of vertically-arranged rollers adapted to engage the said shoe when said carriage is in its inner position; and a guide-sheave arranged in front of said rollers, all coacting for the purpose specified.

22. The combination with a track of a carriage; a reciprocating frame; springs for returning said reciprocating frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted to said reciprocating frame; a lower clutch member pivoted on said carrying-frame; stops for limiting the movement of said lower clutch member on its pivot; a sheave m
said lower-clutch-member-carrying
shoe carried by said carriage; a
pair of vertically-arranged rollers a
engage the said shoe when said car
its inner position; and a guide-s
ranged in front of said rollers, all co
the purpose specified.

23. The combination with a trac
riage; a reciprocating frame; spri
turning said reciprocating frame
mal position; an upper clutch me
ably mounted on said frame; a low
member-carrying frame pivoted o
ciprocating frame; a lower clutch
pivoted on said carrying-frame;
mounted on said lower-clutch-mem
ing frame; a shoe carried by said
bracket; a pair of vertically-arran
adapted to engage the said shoe
carriage is in its inner position; an
sheave arranged in front of said
coacting for the purpose specified.

24. The combination with a trac
riage; a reciprocating frame; spri
turning said reciprocating frame
mal position; an upper clutch me
ably mounted on said frame; a low
member-carrying frame arranged o
ciprocating frame; a lower clutch
pivoted on said carrying-frame;
mounted on said lower-clutch-me
rying frame; a shoe carried by said
a bracket; a pair of vertically-arra
ers adapted to engage the said s
said carriage is in its inner positi
guide-sheave arranged in front of
ers, all coacting for the purpose sp

25. The combination of a carry
vertically-arranged ways on said
frame; a reciprocating frame arran
ways; lugs on said carrying-frame
seated thereon; lugs on said rec
frame, arranged to rest on said
whereby said reciprocating frame i
mally upward; an upper clutch me
wardly-inclined depending suppor
therefor, carried by said reciprocat
a lower-clutch-member-carrying f
oted on said reciprocating frame;
clutch member pivoted on said
frame at a point in front of its pi
for limiting the movement of s
clutch member on its pivot; a too
nection for said clutch members;
the forward part of said lower-clu
ber-carrying frame; a sheave m
said lower-clutch-member-carrying
the rear of its pivot-point; a forw
jecting arm on said reciprocating fra
a guide-sheave carried by said arm ar
to guide the hoisting-rope to said
members, for the purpose specified.

26. The combination of a carrying
vertically-arranged ways on said ca

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; a reciprocating frame arranged in ways; lugs on said carrying-frame; gs seated thereon; lugs on said recipro- frame, arranged to rest upon said gs, whereby said reciprocating frame is normally upward; an upper clutch ber; forwardly-inclined depending sup- g-links therefor, carried by said recip- ng frame; a lower-clutch-member-car- frame pivoted on said reciprocating ; a lower clutch member pivoted on arrying-frame at a point in front of its ; a toothed connection for said clutch bers; a stop on the forward part of said -clutch-member-carrying frame; a e mounted on said lower-clutch-mem- arrying frame at the rear of its pivot- ; a forwardly-projecting arm on said re- cating frame; and a guide-sheave car- y said arm arranged to guide the hoist- ope to said clutch members, for the pur- specified.

The combination of a carrying-frame; cally-arranged ways on said carrying- e; a reciprocating frame arranged in ways; lugs on said carrying-frame; gs seated thereon; lugs on said recipro- g frame, arranged to rest upon said gs, whereby said reciprocating frame is normally upward; an upper clutch mem- forwardly-inclined depending support- nks therefor, carried by said reciprocat- rame; a lower-clutch-member-carrying e pivoted on said reciprocating frame; a r clutch member mounted on said carry- rame at a point in front of its pivot; a ed connection for said clutch members; p on the forward part of said lower- h-member-carrying frame; a sheave nted on said lower-clutch-member-carry- rame to the rear of its pivot-point; a for- ly-projecting arm on said reciprocating e; and a guide-sheave carried by said arranged to guide the hoisting-rope to clutch members, for the purpose speci-

. The combination of a carrying-frame; ically-arranged ways on said carrying- e; a reciprocating frame arranged in ways; lugs on said carrying-frame; ngs seated thereon; lugs on said recipro- g frame, arranged to rest on said springs, reby said reciprocating frame is held nor- y upward; an upper clutch member; for- dly-inclined depending supporting-links efor, carried by said reciprocating frame; wer-clutch-member-carrying frame piv- on said reciprocating frame; a lower ch member pivoted on said carrying- e at a point in front of its pivot; stops limiting the movement of said lower h member on its pivot; a toothed con- n for said clutch members; a stop on rward part of said lower-clutch-mem- ber-carrying frame; and a sheave mounted on said lower-clutch-member-carrying frame to the rear of its pivot-point, for the purpose specified.

29. The combination of a carrying-frame; vertically-arranged ways on said carrying-frame; a reciprocating frame arranged in said ways; lugs on said carrying-frame; springs seated thereon; lugs on said reciprocating frame, arranged to rest upon said springs, whereby said reciprocating frame is held normally upward; an upper clutch member; forwardly-inclined depending supporting-links therefor, carried by said reciprocating frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame at a point in front of its pivot; a toothed connection for said clutch members; a stop on the forward part of said lower-clutch-member-carrying frame; and a sheave mounted on said lower-clutch-member-carrying frame at the rear of its pivot-point, for the purpose specified.

30. The combination of a carrying-frame; vertically-arranged ways on said carrying-frame; a reciprocating frame arranged in said ways; lugs on said carrying-frame; springs seated thereon; lugs on said reciprocating frame, arranged to rest upon said springs, whereby said reciprocating frame is held normally upward; an upper clutch member; forwardly-inclined depending supporting-links therefor, carried by said reciprocating frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member mounted on said carrying-frame at a point in front of its pivot; a toothed connection for said clutch members; a stop on the forward part of said lower-clutch-member-carrying frame; and a sheave mounted on said lower-clutch-member-carrying frame at the rear of its pivot-point, for the purpose specified.

31. The combination of a carrying-frame; vertically-arranged ways on said carrying-frame; a reciprocating frame arranged in said ways; lugs on said carrying-frame; springs seated thereon; lugs on said reciprocating frame, arranged to rest on said springs, whereby said reciprocating frame is held normally upward; an upper clutch member; forwardly-inclined depending supporting-links therefor, carried by said reciprocating frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame at a point in front of its pivot; stops for limiting the movement of said lower clutch member on its pivot; a sheave mounted on said lower-clutch-member-carrying frame at the rear of its pivot-point; a forwardly-projecting arm on said reciprocating frame; and a guide-sheave carried by said

rm arranged to guide the hoisting-rope to id clutch members, for the purpose speci- d.

32. The combination of a carrying-frame; rtically-arranged ways on said carrying- ame; a reciprocating frame arranged in said ays; lugs on said carrying-frame; springs ated thereon; lugs on said reciprocating ame, arranged to rest upon said springs, hereby said reciprocating frame is held nor- ally upward; an upper clutch member; for- ardly-inclined depending supporting-links erefor, carried by said reciprocating frame; lower-clutch-member-carrying frame piv- ed on said reciprocating frame; a lower utch member pivoted on said carrying- ame at a point in front of its pivot; a sheave ounted on said lower-clutch-member-carry- g frame at the rear of its pivot-point; a for- ardly-projecting arm on said reciprocating ame; and a guide-sheave carried by said rm arranged to guide the hoisting-rope to id clutch member, for the purpose speci- d.

33. The combination of a carrying-frame; rtically-arranged ways on said carrying- ame; a reciprocating frame arranged in said ays; lugs on said carrying-frame; springs ated thereon; lugs on said reciprocating ame, arranged to rest upon said springs, hereby said reciprocating frame is held nor- ally upward; an upper clutch member; for- ardly-inclined depending supporting-links erefor, carried by said reciprocating frame; lower-clutch-member-carrying frame piv- d on said reciprocating frame; a lower tch member mounted on said carrying- me at a point in front of its pivot; a sheave unted on said lower-clutch-member-carry- frame at the rear of its pivot-point; a for- rdly-projecting arm on said reciprocating me; and a guide-sheave carried by said n arranged to guide the hoisting-rope to l clutch member, for the purpose speci- .

4. The combination of a carrying-frame; rtically-arranged ways on said carrying- ne; a reciprocating frame arranged in said ys; lugs on said carrying-frame; springs ed thereon; outwardly-projecting lugs on reciprocating frame, arranged to rest said springs, whereby said reciprocating ne is held normally upward; an upper tch member; forwardly-inclined depend- supporting-links therefor, carried by said procating frame; a lower-clutch-member- ying frame pivoted on said reciprocat- frame; a lower clutch member pivoted on carrying-frame at a point in front of its t; stops for limiting the movements of lower clutch member on its pivot; and a ve mounted on said lower-clutch-mem- carrying frame at the rear of its pivot- t, for the purpose specified.

35. The combination of a carrying-fra vertically-arranged ways on said carry frame; a reciprocating frame arranged in ways; lugs on said carrying-frame; spr seated thereon; lugs on said reciproca frame, arranged to rest upon said spri whereby said frame is held normally ward; an upper clutch member; forwar inclined depending supporting-links th for, carried by said reciprocating frame lower-clutch-member-carrying frame pi ed on said reciprocating frame; a lower cl member pivoted on said carrying-frame point in front of its pivot; and a she mounted on said lower-clutch-member-ca ing frame at the rear of its pivot-point, the purpose specified.

36. The combination of a carrying-fra vertically-arranged ways on said frame; a ciprocating frame arranged in said wa lugs on said carrying-frame; springs sea thereon; lugs on said reciprocating frame, ranged to rest upon said springs, where said reciprocating frame is held normally ward; an upper clutch member; forward inclined depending supporting-links thered carried by said reciprocating frame; a low clutch-member-carrying frame pivoted said reciprocating frame; a lower clu member mounted on said carrying-frame a point in front of its pivot; and a she mounted on said lower-clutch-member-car ing frame at the rear of its pivot-point, the purpose specified.

37. The combination of a reciprocati frame; a spring for returning said reciproc ing frame to its normal position; an upp clutch member; forwardly-inclined suppo ing-links therefor carried by said reciproc ing frame; a lower-clutch-member-carry frame pivoted on said reciprocating frame; lower clutch member pivoted on said car ing-frame; stops for limiting the moveme of said lower clutch member on its piv connecting means for said clutch members; stop on the forward part of said lower-clutc member-carrying frame; a sheave mount on said lower-clutch-member-carrying fra a forwardly-projecting arm on said recipr cating frame; and a guide-sheave carried said arm arranged to guide the rope to s clutch members, for the purpose specified.

38. The combination of a reciprocati frame; a spring for returning said reciproc ing frame to its normal position; an upp clutch member; forwardly-inclined supp ing-links therefor carried by said reciproc ing frame; a lower-clutch-member-carry frame pivoted on said reciprocating frame; lower clutch member pivoted on said car ing-frame; connecting means for said clutc members; a stop on the forward part said lower-clutch-member-carrying frame; sheave mounted on said lower-clutch mem

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rying frame; a forwardly-projecting
n said reciprocating frame; and a
sheave carried by said arm arranged to
the rope to said clutch members, for
rpose specified.
The combination of eciprocating
; a spring for returning said reciprocat-
me to its normal position; an upper
member; forwardly-inclined support-
ks therefor carried by said reciprocat-
me; a lower-clutch-member-carrying
pivoted on said reciprocating frame; a
clutch member arranged on said carry-
me; connecting means for said clutch
ers; a stop on the forward part of said
-clutch-member-carrying frame; a
e mounted on said lower-clutch-mem-
rrying frame; a forwardly-projecting
n said reciprocating frame; and a
sheave carried by said arm arranged
de the rope to said clutch members,
purpose specified.
The combination of a reciprocating
; a spring for returning said reciprocat-
me to its normal position; an upper
member; forwardly-inclined support-
ks therefor carried by said reciprocat-
me; a lower-clutch-member-carrying
pivoted on said reciprocating frame; a
clutch member pivoted on said carry-
me; stops for limiting the movement
l lower clutch member on its pivot;
cting means for said clutch members; a
n the forward part of said lower-clutch-
r-carrying frame; and a sheave mount-
said lower-clutch-member-carrying
; for the purpose specified.
The combination of a reciprocating
; a spring for returning said recipro-
frame to its normal position; an upper
member; forwardly-inclined support-
ks therefor carried by said reciprocat-
me; a lower-clutch-member-carrying
pivoted on said reciprocating frame; a
clutch member pivoted on said carry-
me; connecting means for said clutch
ers; a stop on the forward part of said
-clutch-member-carrying frame; and a
e mounted on said lower-clutch-mem-
rrying frame, for the purpose specified.
The combination of a reciprocating
; a spring for returning said recipro-
frame to its normal position; an upper
member; forwardly-inclined support-
ks therefor carried by said reciprocat-
me; a lower-clutch-member-carrying
pivoted on said reciprocating frame; a
clutch member arranged on said carry-
me; connecting means for said clutch
rs; a stop on the forward part of said
lutch-member-carrying frame; and a
mounted on said lower-clutch-mem-
ying frame, for the purpose specified.
he combination of a reciprocating
frame; a spring for returning said frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; connecting means for said clutch members; a stop on the forward part of said lower-clutch-member-carrying frame; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

44. The combination of a reciprocating frame; a spring for returning said frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member arranged on said carrying-frame; connecting means for said clutch members; a stop on the forward part of said lower-clutch-member-carrying frame; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

45. The combination of a reciprocating frame; a spring for returning said frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; connecting means for said clutch members; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

46. The combination of a reciprocating frame; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame, a lower clutch member pivoted on said carrying-frame; connecting means for said clutch members; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

47. The combination of a reciprocating frame; a spring for returning said frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member arranged on said carrying-frame; connecting means for said clutch members; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

48. The combination of a reciprocating frame; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member arranged on said carrying-frame; connecting means for said clutch members; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

49. The combination of a reciprocating frame; a spring for returning said frame to its

normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; a stop on the forward part of said lower-clutch-member-carrying frame; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

50. The combination of a reciprocating frame; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; a stop on the forward part of said lower-clutch-member-carrying frame; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

51. The combination of a reciprocating frame; a spring for returning said frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member arranged on said carrying-frame; a stop on the forward part of said lower-clutch-member-carrying frame; and a sheave mounted on said lower-clutch-member-carrying frame; for the purpose specified.

52. The combination of a reciprocating frame; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member arranged on said carrying-frame; a stop on the forward part of said lower-clutch-member-carrying frame; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

53. The combination of a reciprocating frame; a spring for returning said frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

54. The combination of a reciprocating frame; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member pivoted on said carrying-frame; and a sheave mounted on said lower-clutch-member-carrying frame, for the purpose specified.

55. The combination of a reciprocating frame; a spring for returning said frame to its normal position; an upper clutch member movably mounted on said frame; a lower-clutch-member-carrying frame pivoted on said reciprocating frame; a lower clutch member arranged on said carrying-frame; and a sheave mounted on said lower-member-carrying frame, for the specified.

56. The combination of a recip frame; an upper clutch member mounted on said frame; a lower-clut ber-carrying frame pivoted on said cating frame; a lower clutch mem ranged on said carrying-frame; and mounted on said lower-clutch-membe ing frame, for the purpose specified.

57. The combination with a track riage; a shoe on said carriage; a br pair of vertically-arranged rollers ad engage said shoe when said carriage initial position; and a guide-sheave centrally of said rollers, for the purpo fied.

58. The combination with a fram upper clutch member movably m thereon; a pivotally-mounted lower member-carrying frame; a lower clut ber arranged thereon; connecting m said clutch members; and a sheave m on said lower-clutch-member-carryi at the rear of the pivot thereof, for t pose specified.

59. The combination with a fram upper clutch member movably m thereon; a pivotally-mounted lower member-carrying frame; a lower clut ber arranged thereon; and a sheave m on said lower-clutch-member-carryi at the rear of the pivot thereof, for t pose specified.

60. The combination of a recipr frame; an upper clutch member m thereon; a lower-clutch-member-c frame pivoted on said reciprocating a lower clutch member arranged on s rying-frame; and a stop on the forwa of said lower-clutch-member-carrying for the purpose specified.

61. The combination of a recipr frame; an upper clutch member m thereon; a lower-clutch-member-c frame pivoted on said reciprocating and a lower clutch member arranged carrying-frame, for the purpose specifi

62. The combination of a recipr frame; a pair of clutch members thereby; a spring for holding said fra mally in one position; and means for ing said clutch members on the re said reciprocating frame to its norma tion, for the purpose specified.

63. In a device of the class describ combination with a main weight-supp pulley over which the rope runs, of a member having operative connecti the said pulley, and a second clutch operatively connected with the first member, whereby both clutch m move in unison to clamp the rope.

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n a device of the class described, the ation with a movably-mounted main ing-pulley over which the rope runs, r of clamping-jaws having operative ions with said pulley, whereby they ved in unison to clamp the rope, as d.

In witness whereof I have hereunto set my hand and seal in presence of two witnesses.

ALLEN P. BOYER. [L. S.]

Witnesses:
A. J. ALBER,
OTIS A. EARL.

No. 876,935. PATENTED JAN. 21, 19

A. P. BOYER.

CARRIER.

APPLICATION FILED AUG. 14, 1906. RENEWED MAY 31, 1907.

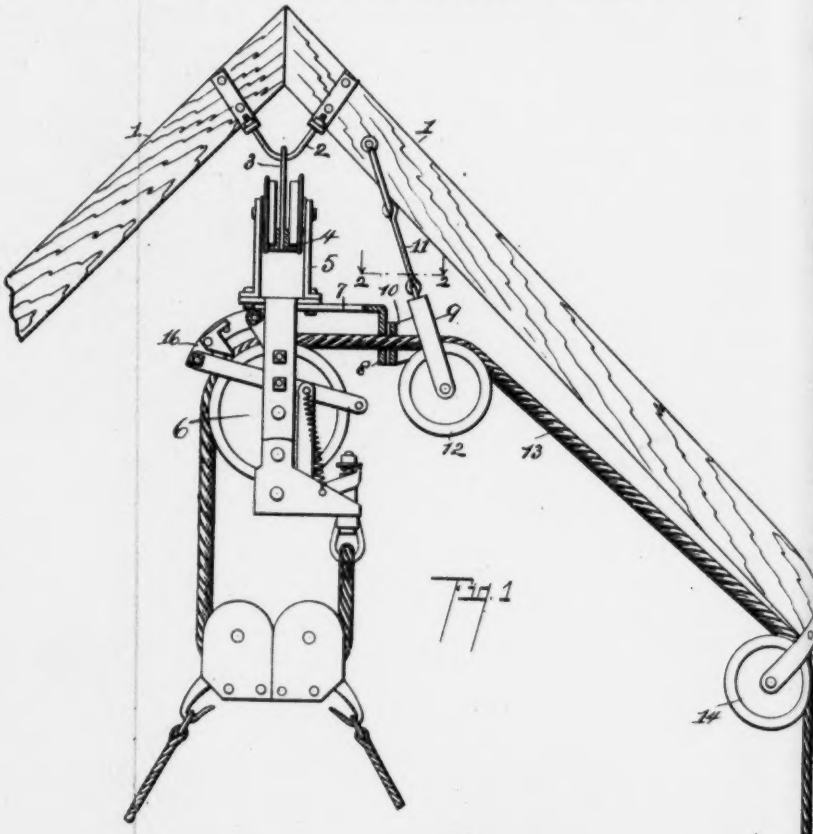


Fig. 1

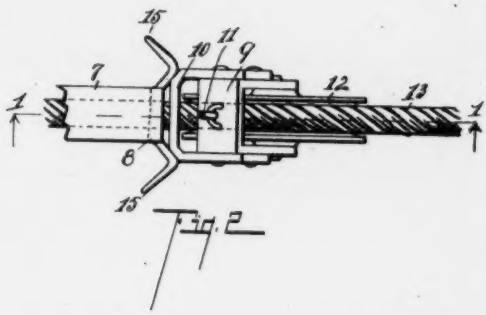


Fig. 2

Witnesses:

Luke G. Greenfield

Clara E. Braden

Inventor,

Allen P. Boyer

By Chappell & Co

Att'ys

THE NORRIS PETERS CO., WASHINGTON, D. C.

TORN PA

UNITED STATES PATENT OFFICE.

ALLEN P. BOYER, OF GOSHEN, INDIANA.

CARRIER.

876,935. Specification of Letters Patent. Patented Jan. 21, 1908.

Application filed August 14, 1906. Serial No. 330,553. Renewed May 31, 1907. Serial No. 376,502.

whom it may concern:

it known that I, ALLEN P. BOYER, a of the United States, residing at n, in the county of Elkhart, State of a, have invented certain new and use- provements in Carriers, of which the ing is a specification.

s invention relates to improvements in rs.

main object of this invention is to le in a carrier an improved support or when in its hoisting position.

ther objects, and objects relating to ural detail, will definitely appear from tailed description to follow.

ccomplish the objects of my invention e devices and means described in the ing specification.

invention is clearly defined and point- in the claims.

tructure embodying the features of my tion is clearly illustrated in the ac- anying drawing forming a part of this cation in which:

ure 1 is an elevation of a structure em- ng my invention partially in section on corresponding to 1—1 of Fig. 2. Fig. enlarged detail section taken on a line ponding to 2—2 Fig. 1.

the drawing similar reference charac- efer to similar parts in both views and ctions are taken looking in the direction little arrows at the end of the section

ferring to the drawing, 1—1 represent afters of a barn or other building in the track 4 is suspended by means of rs 2. The track is provided with sus- ng arms 3 through which the hangers 2 are preferably U-shaped are arranged, giving the track lateral or swinging m of movement.

e carrier carriage 5 is of the usual or any d construction and carries the main ng pulley 6. As various forms of mechanisms might be employed in ation and as the clutch 16 shown here- ns no part of this invention, I do not describe the same or its operation in

the carriage frame is a laterally pro- g arm 7 which is preferably provided arms 15 which diverge forwardly and e rearwardly, thereby forming a seat 8 e end of the arm and guides at each side of. The arm 7 is provided with an opening preferably central of the seat thereof through which the hoisting rope 13 is arranged as is illustrated.

A pulley block 9 having a projection 10 thereon adapted to engage or resting on the seat of the arm 7 is provided. The projection 10 of the pulley block is provided with an opening through which the hoisting rope is arranged. The pulley block 9 is supported by a swinging support 11 which is secured to the rafter 1 or other suitable support at a point above and to the rear of the seat in the arm 7 when the carrier is in its hoisting position so that when strain is applied thereto as by the pull or load on the hoisting rope it counteracts the lateral strain on the carriage.

My improved carrier is designed principally for use as a carrier where the load is hoisted and then carried along a track to the desired point of delivery as in hay carriers. By thus arranging the pulley block 9 it swings into operative position when the carriage is brought into its hoisting position and the hoisting rope 13 is tightened or is under tension.

The guide pulley 14 is preferably arranged in alinement with the pulleys 6 and 12, although this is not an essential to the practical working of the structure.

By arranging the parts as I have illustrated and described, I secure a device in which the lateral strain on the carrier is effectively counteracted and the structure is at the same time very economical to produce and is strong and durable.

I have illustrated and described my improved carrier in detail in a simple form which shows its general features. It is evident that it may be greatly varied in structural details without departing from my invention and I desire to be understood as claiming the invention broadly as well as in the form illustrated.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A combination with a track, of a carriage; a pulley for the hoisting rope arranged transversely of the carriage, a laterally projecting arm on said carriage having rearwardly diverging guide arms thereon and a seat at its outer end having an opening therethrough, through which the hoisting rope is arranged; a pulley block having a projection thereon adapted to rest on said seat on said

arm, said projection having an opening therethrough, through which the hoisting rope is arranged; a swinging support for said pulley block secured at a point above and to the rear of the seat on said arm when said carriage is in its hoisting position, whereby the lateral strain on said carriage is counteracted by the strain on said pulley block; and a guide pulley for said hoisting rope, for the purpose specified.

2. A combination with a track, of a carriage; a pulley for the hoisting rope arranged transversely of the carriage, a laterally projecting arm on said carriage having rearwardly diverging guide arms thereon and a seat at its outer end having an opening therethrough, through which the hoisting rope is arranged; a pulley block having a projection thereon adapted to rest on said seat on said arm, said projection having an opening therethrough, through which the hoisting rope is arranged; and a swinging support for said pulley block secured at a point above and to the rear of the seat on said arm when said carriage is in its hoisting position, whereby the lateral strain on said carriage is counteracted by the strain on said pulley block, for the purpose specified.

3. A combination with a track, of a carriage; a pulley for the hoisting rope arranged transversely of the carriage, a laterally projecting arm on said carriage having a seat at its outer end having an opening therethrough, through which the hoisting rope is arranged; a pulley block having a projection thereon adapted to rest on said seat on said arm, said projection having an opening therethrough, through which the hoisting rope is arranged; a swinging support for said pulley block secured at a point above and to the rear of the seat on said arm when said carriage is in its hoisting position, whereby the lateral strain on said carriage is counteracted by the strain on said pulley block; and a guide pulley for said hoisting rope, for the purpose specified.

4. A combination with a track, of a carriage; a pulley for the hoisting rope arranged transversely of the carriage, a laterally projecting arm on said carriage having a seat at its outer end having an opening therethrough, through which the hoisting rope is arranged; a pulley block having a projection thereon adapted to rest on said seat on said arm, said projection having an opening therethrough, through which the hoisting rope is arranged; and a swinging support for said pulley block secured at a point above and to the rear of the seat on said arm when said carriage is in its hoisting position, whereby the lateral strain on said carriage is counteracted by the strain on said pulley block, for the purpose specified.

5. A combination with a track, of a carriage; a pulley for the hoisting rope arranged transversely of the carriage, a laterally projecting arm on said carriage having rea diverging guide arms thereon and a its outer end; a pulley block adapte on said seat on said arm; a swinging for said pulley block secured at a poi and to the rear of the seat on said a said carriage is in its hoisting position by the lateral strain on said carriage teracted by the strain on said pulle and a guide pulley for said hoisting the purpose specified.

6. A combination with a track, riage; a pulley for the hoisting rope transversely of the carriage, a later jecting arm on said carriage havi wardly diverging guide arms there seat at its outer end; a pulley block to rest on said seat on said arm; and ing support for said pulley block sec point above and to the rear of the said arm when said carriage is in its position, whereby the lateral strain carriage is counteracted by the strai pulley block, for the purpose specifi

7. A combination with a track, riage; a pulley for the hoisting rope transversely of the carriage, a later jecting arm on said carriage having its outer end; a pulley block adapte on said seat on said arm; a swinging for said pulley block secured at a poi and to the rear of the seat on said a said carriage is in its hoisting positio by the lateral strain on said ca counteracted by the strain on sai block; and a guide pulley for said rope, for the purpose specified.

8. A combination with a track, riage; a pulley for the hoisting rope transversely of the carriage, a later jecting arm on said carriage having its outer end; a pulley block adapte on said seat on said arm; and a swing port for said pulley block secured a above and to the rear of the seat on when said carriage is in its hoisting whereby the lateral strain on said ca counteracted by the strain on sai block, for the purpose specified.

9. A combination with a track, riage; a pulley for the hoisting rope transversely of the carriage; a seat carriage; a pulley block adapted t said seat; a swinging support for sa block secured at a point above an rear of said seat when said carriage hoisting position, whereby the latera on said carriage is counteracted by sa ley block; and a guide pulley for said h rope, for the purpose specified.

10. A combination with a track, of riage; a pulley for the hoisting rope ar transversely of the carriage; a seat carriage; a pulley block adapted to said seat; and a swinging suppo

TORN PA

ock secured at a point above and to of said seat when said carriage is in ing position, whereby the lateral said carriage is counteracted by y block, for the purpose specified.
combination with a track, of a car- ulley for the hoisting rope arranged ely of the carriage; a pulley block; g support for said pulley block ar- that said block engages said car- n it is in its hoisting position where- teral strain of the hoisting rope on age is counteracted by the strain of ng rope on the said pulley block; de pulley for the hoisting rope, for se specified.
combination with a track, of a carriage; a pulley for the hoisting rope arranged transversely of the carriage; a pulley block; and a swinging support for said pulley block arranged so that said block engages said carriage when it is in its hoisting position whereby the lateral strain of the hoisting rope on said carriage is counteracted by the strain of the hoisting rope on the said pulley block, for the purpose specified.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

ALLEN P. BOYER. [L. S.]

Witnesses:
OTIS A. EARL,
LULU GREENFIELD.

340

No. 878,335. PATENTED FEB. 4

A. P. BOYER.

HOISTING APPARATUS.

APPLICATION FILED SEPT. 18, 1907.

2 SHEETS-

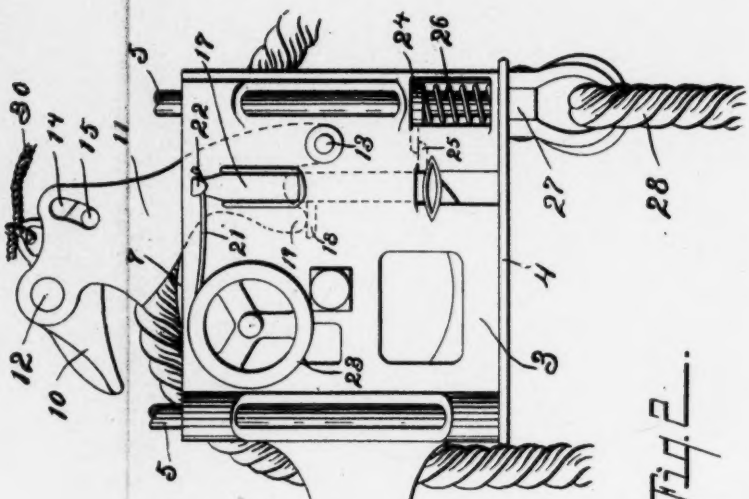


Fig. 2.

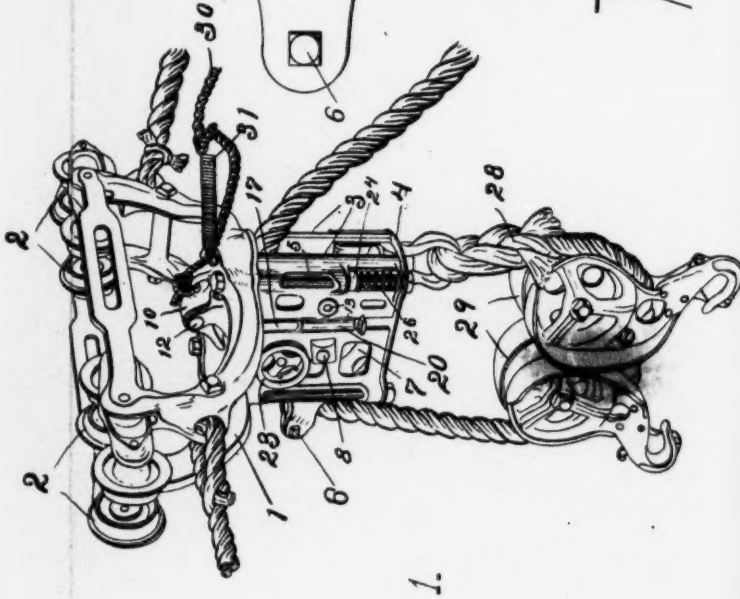


Fig. 1.

Witnesses

Lulu Greenfield

Gertrude Tallman

Inventor

Allen P. Boyer

By Chappell & Co.

342

No. 878,335. PATENTED FEB. 4,

A. P. BOYER.

HOISTING APPARATUS.

APPLICATION FILED SEPT. 18, 1907.

2 SHEETS—

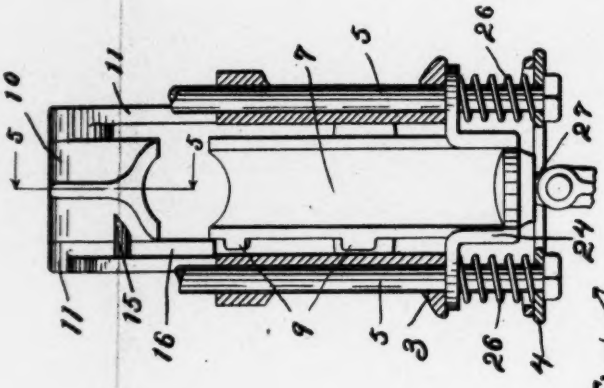


Fig. 4.

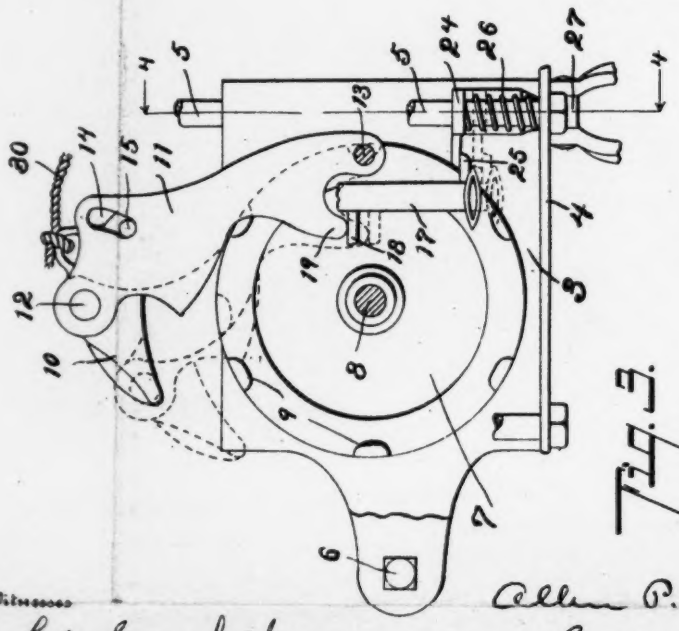


Fig. 3.

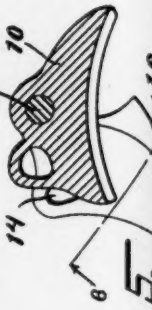
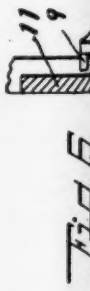


Fig. 5



Witnesses

Lulu Grunfeld

Gertrude Tallman

Inventor

Allen P. Boyer

By Chappell Ha

Attorneys

NITED STATES PATENT OFFICE.

ALLEN P. BOYER, OF GOSHEN, INDIANA.

HOISTING APPARATUS.

8,335. Specification of Letters Patent. Patented Feb. 4, 1908.

Application filed September 18, 1907. Serial No. 393,440.

hom it may concern:

known that I, ALLEN P. BOYER, a f the United States, residing at the Goshen, county of Elkhart, State of have invented certain new and mprovements in Hoisting Apparatus, the following is a specification.

nvention relates to improvements in apparatus.

nproved hoisting apparatus is par- designed by me for use in carriers, hay-carriers and the like, although it ed and desirable for use in any rela- ere it is desired to lock a load in an position.

ain object of this invention is to pro- improved hoisting apparatus adapt- tomatically lock a load in any posi- t is, at any point in its elevation.

er object is to provide a structure ing the above advantages which per- lowering of the load after the same hoisted.

er objects, and objects relating to al details, will definitely appear from iled description to follow.

mplish the objects of my invention devices and means described in the g specification.

nvention is clearly defined and point- n the claims.

ucture embodying the features of my n is clearly illustrated in the ac- ying drawing, forming a part of this ation, in which,

e 1 is a perspective view of a struc- bodying the features of my inven- g. 2 is a detail side elevation thereof, iage being broken away; Fig. 3 is a iew with one side of the frame broken he clutch member being shown in its g position by dotted lines, the pivots clutch supporting link and the pulley being shown in section; Fig. 4 is a ertical section taken on a line cor- ing to line 4—4 of Fig. 3; Fig. 5 is an detail section taken on a line cor- ing to line 5—5 of Fig. 4, of the ember and supporting link therefor; s an enlarged detail taken on a onding to line 6—6 of Fig. 5, relation of the clutch actuating pulley.

awing, the sectional views are in the direction of the little arrows at the ends of the section lines, and similar reference characters refer to similar parts throughout the several views.

Referring to the drawing, the structure illustrated is provided with a carriage as 1. The carriage 1 is provided with wheels 2 adapted to travel on a suitable track. The frame is preferably made up of side pieces 3 and a bottom piece 4, suspended and secured to the carriage by means of the bolts 5, the side pieces of the frame being connected by the bolt 6:

The pulley 7 is journaled on a suitable spindle 8 preferably arranged longitudinally of the carriage so that the pulley is transverse thereof, as is illustrated in the drawing. The pulley is provided with laterally-projecting teeth or projections 9 arranged at suitable intervals about the same. A clutch member 10 is pivotally mounted on the upper ends of the links 11 by means of the pivot bolt 12. The links 11 are mounted on the pivots 13 which are preferably arranged in advance of the spindle 8 for the pulley. The inner or gripping face of the clutch member 10 is preferably curved to correspond to the pulley and coacts therewith in gripping a rope. The supporting links for the clutch member or clamping jaws 10 are so arranged that, when they are swung downwardly, the clutch member is forced or carried inwardly against the rope on the pulley, clamping the same thereon.

One of the links is slotted at 14 to receive the pin 15 on the clutch member, thereby limiting the pivotal movement of the clutch member on the links. This arrangement allows the clutch member to adjust itself to the rope and avoids the necessity of the accurate fitting and arrangement of the parts. The clutch member is preferably pivoted so that its forward end over-balances the rear end.

On the inner face of one of the links 11 is a rigid pawl or tooth 16 adapted, when the links are swung slightly downward, to be engaged by the teeth 9 on the pulley, so that the rearward movement of the pulley draws the clamping member down into its clamping position; see the dotted lines in Fig. 3. This pawl is preferably V-shaped, its engaging faces being preferably curved. The supporting-links for the clutch member are normally held in their elevated position by the sliding dog 17 having an arm 18 which engages the

downwardly-projecting arm 19 on one of the links.

When the links are in their elevated position, the pulley is free to revolve in either direction without acting thereon. When, however, the links are released by the dog 17 they drop downward of their own weight, so that the pawl thereon is in position to be engaged by the teeth on the pulley. The rearward movement of the pulley, as explained, draws the clutch member down onto the rope, thereby clamping the same. On the forward movement of the pulley the teeth on the pulley engage the under side of the pawl passing under the same to lift the clutch free from the rope. The trip dog 17 is arranged in a suitable way 20 provided therefor in the side of the frame. The trip dog is held normally upward by the spring 21 which engages the hook 22 on the dog. This spring is preferably carried by the wheel-like support 23 provided therefor on the side of the frame; see Figs. 1 and 2. In order that the clutch may be automatically actuated by the load, I provide a trip 24, which is adapted to engage the arm 25 on the trip dog. The trip 24 is held normally upward by springs 26. The swivel 27 is connected to the trip member. The hoisting rope 28 is connected to the trip member 24 by means of the swivel, and, after passing through the running pulleys 29, is brought over the pulley 7. The trip member 24 is mounted upon the vertical frame bolts 5 to slide thereon so that it is properly guided. Thus arranged, the greater the load the greater the clamping force of the clutch. The spring 21 is preferably not strong enough to release the clutch member or raise it from its clutching position until the same is released by the slight forward movement of the pulley, which lifts the clutch from the rope, the spring being of sufficient strength to counterbalance the weight of the clutch and its support and hold it in its elevated position. This is an advantage, as it prevents the releasing of the hoisting rope after the load is released, which is of great advantage, particularly in hay-carriers, as the sling or fork is held in its elevated position during the return of the carrier to its hoisting position, where, by a slight pull on the hoisting rope or on the trip rope 30, the clutch is released so that the sling or fork may be readily lowered.

It is sometimes desirable to release the clutch so that a load may be relowered. This may be done by the trip rope 30, which is preferably connected to the top of the clutch. A spring 31 is preferably provided for sustaining the weight of the trip rope.

By arranging the parts as I have illustrated and described, I provide a device by which the load is automatically locked in any position, the weight of the load serving to actuate the clutch. The load may be lowered as desired. The pulley forms one of the clutch members, thereby simplifying construction. The rope is clamped so wear thereon is reduced to a minim

I have illustrated and described proved hoisting apparatus in detail form preferred by me on account structural simplicity and convenie operation. I am, however, aware t capable of considerable variation in tural details without departing fr invention, and I desire to be under claiming the same specifically, as illu as well as broadly.

Having thus described my inventi I claim as new and desire to secure ters Patent is:

1. The combination with a fram pulley having teeth thereon; a link slot therein, pivoted on said frame, for said link being arranged in fron journal for said pulley; a clutch having a curved engaging face ad coact with the pulley in gripping pivotally mounted on said link; a pin clutch member adapted to engage in said link whereby the pivotal m of said clutch member is limited adapted to hold said link in its position; a return spring therefor; wardly and forwardly-projecting V fixed pawl or tooth on said link adapt gage the teeth on said pulley when sa released by said dog; a hoisting rop member for said dog to which said connected; and a return spring for member.

2. The combination with a fram pulley having teeth thereon; a link on said frame, the pivot for said lin arranged in front of the journal pulley; a clutch member adapted with the pulley in gripping a rope, p mounted on said link; a dog adapted said link in its elevated position; a spring therefor; a downwardly and for projecting V-shaped pawl or tooth link adapted to engage the teeth pulley when said link is released by a hoisting rope; a trip member for to which the said rope is connected return spring for said trip member.

3. The combination with a fram pulley having teeth thereon; a link slot therein pivoted on said frame, t for said link being arranged in fron journal for said pulley; a clutch having a curved engaging face ad coact with the pulley in gripping pivotally mounted on said link; a pin clutch member adapted to engage s in said link whereby the pivotal mo of said clutch member is limited; adapted to hold said link in its position; a return spring therefor; a said link adapted to engage the teeth

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hen said link is released by said dog; ng rope; a trip member for said dog h the said rope is connected; and a spring for said trip member.

e combination with a frame, of a aving teeth thereon; a link pivoted frame, the pivot for said link being d in front of the journal for said a clutch member adapted to coact e pulley in gripping a rope pivotally d on said link; a dog adapted to hold k in its elevated position; a return therefor; a pawl on said link adapted ge the teeth on said pulley when said released by said dog; a hoisting rope; member for said dog to which the said connected; and a return spring for p member.

he combination with a frame, of a having teeth thereon; a link having a erein pivoted on said frame, the pivot d link being arranged in front of the for said pulley; a clutch member hav- urved engaging face adapted to coact he pulley in gripping a rope, pivotally ed on said link; a pin on said clutch r adapted to engage said slot in said hereby the pivotal movement of said member is limited; a dog adapted to aid link in its elevated position; a ardly and forwardly-projecting V- fixed pawl or tooth on said link d to engage the teeth on said pulley said link is released by said dog; a g rope; and a trip member for said which the said rope is connected.

The combination with a frame, of a pul- ving teeth thereon; a link pivoted on ame, the pivot for said link being ar- d in front of the journal for said pulley; h member adapted to coact with the in gripping a rope pivotally mounted d link; a dog adapted to hold said its elevated position; a downwardly forwardly-projecting V-shaped fixed r tooth on said link adapted to engage eth on said pulley when said link is ed by said dog; a hoisting rope; and member for said dog to which the said s connected.

The combination with a frame, of a having teeth thereon; a link having therein pivoted on said frame, the for said link being arranged in front of urnal for said pulley; a clutch mem- ving a curved engaging face adapted t with the pulley in gripping a rope, ly mounted on said link; a pin on h member adapted to engage said d link whereby the pivotal move- d clutch member is limited; a dog to hold said link in its elevated evan pawl on said link adapted to en- pawleeth on said pulley when said link d by said dog; a hoisting rope; and a trip member for said dog to which the said rope is connected.

8. The combination with a frame, of a pulley having teeth thereon; a link pivoted on said frame, the pivot for said link being arranged in front of the journal for said pulley; a clutch member adapted to coact with the pulley in gripping a rope, pivotally mounted on said links; a dog adapted to hold said link in its elevated position; a pawl on said link adapted to engage the teeth on said pulley when said link is released by said dog; a hoisting rope; and a trip member for said dog to which the said rope is connected.

9. The combination with a frame, of a pulley having teeth thereon; a link having a slot therein pivoted on said frame, the pivot for said link being arranged in front of the journal for said pulley; a clutch member having a curved engaging face adapted to coact with the pulley in gripping a rope, pivotally mounted on said link; a pin on said clutch member adapted to engage said slot in said link whereby the pivotal movement of said clutch member is limited; a downwardly and forwardly-projecting V-shaped fixed pawl or tooth on said link adapted to engage the teeth on said pulley when said link is released by said dog; and a dog adapted to hold said link in its elevated position arranged to be tripped by the weight of the load on the hoisting rope.

10. The combination with a frame, of a pulley having teeth thereon; a link pivoted on said frame, the pivot for said link being arranged in front of the journal for said pulley; a clutch member having a curved engaging face adapted to coact with the pulley in gripping a rope pivotally mounted on said link; a downwardly and forwardly-projecting V-shaped fixed pawl or tooth on said link adapted to engage the teeth on said pulley when said link is released by said dog; and a dog adapted to hold said link in its elevated position arranged to be tripped by the weight of the load on the hoisting rope.

11. The combination with a frame, of a pulley having teeth thereon; a link having a slot therein pivoted on said frame, the pivot for said link being arranged in front of the journal for said pulley; a clutch member adapted to coact with the pulley in gripping a rope, pivotally mounted on said link; a pin on said clutch member adapted to engage said slot in said link whereby the pivotal movement of said clutch member is limited; a downwardly and forwardly-projecting V-shaped fixed pawl or tooth on said link adapted to engage the teeth on said pulley when said link is released by said dog; and a dog adapted to hold said link in its elevated position arranged to be tripped by the weight of the load on the hoisting rope.

12. The combination with a frame, of a pulley having teeth thereon; a link pivoted

on said frame, the pivot for said link being arranged in front of the journal for said pulley; a clutch member adapted to coact with the pulley in gripping a rope, pivotally mounted on said link; a downwardly and forwardly-projecting V-shaped fixed pawl or tooth on said link adapted to engage the teeth on said pulley when said link is released by said dog; and a dog adapted to hold said link in its elevated position arranged to be tripped by the weight of the load on the hoisting rope.

13. The combination with a frame, of a pulley having teeth thereon; a link having a slot therein pivoted on said frame, the pivot for said link being arranged in front of the journal for said pulley; a clutch member having a curved engaging face adapted to coact with the pulley in gripping a rope, pivotally mounted on said link; a pin on said clutch member adapted to engage said slot in said link whereby the pivotal movement of said clutch member is limited; a pawl on said link adapted to engage the teeth on said pulley when said link is released by said dog; and a dog adapted to hold said link in its elevated position arranged to be tripped by the weight of the load on the hoisting rope.

14. The combination with a frame, of a pulley having teeth thereon; a link pivoted on said frame, the pivot for said link being arranged in front of the journal for said pulley; a clutch member having a curved engaging face adapted to coact with the pulley in gripping a rope pivotally mounted on said link; a pawl on said link adapted to engage the teeth on said pulley when said link is released; and a dog adapted to hold said link in its elevated position arranged to be tripped by the weight of the load on the hoisting rope.

15. The combination with a frame of a pulley having teeth thereon; a link having a slot therein pivoted on said frame, the pivot for said link being arranged in front of the journal for said pulley; a clutch member adapted to coact with the pulley in gripping a rope pivotally mounted on said link; a pin on said clutch member adapted to engage said slot in said link whereby the pivotal movement of said clutch member is limited; a pawl on said link adapted to engage the teeth on said pulley when said link is released; and a dog adapted to hold said link in its elevated position arranged to be tripped by the weight of the load on the hoisting rope.

16. The combination with a frame, of a pulley having teeth thereon; a link pivoted on said frame, the pivot for said link being arranged in front of the journal for said pulley; a clutch member adapted to coact with the pulley in gripping of a rope, pivotally mounted on said link; a pawl on said link adapted to engage the teeth on said pulley when said link is released; and a dog adapted to hold said link in its elevated po ranged to be tripped by the weig load on the hoisting rope.

17. The combination with a fra pulley having teeth thereon; a lin on said frame, the pivot for said l arranged in front of the journal for ley; a clutch member adapted to c the pulley in gripping a rope, mo said link; a downwardly and forwa jecting V-shaped fixed pawl or too link adapted to engage the teeth o ley when said link is released; a adapted to hold said link in its eleva tion arranged to be tripped by the the load on the hoisting rope.

18. The combination with a fra pulley having teeth thereon; a link slot therein pivoted on said frame, for said link being arranged in fro journal for said pulley; a clutch adapted to coact with the pulley in a rope, mounted on said link; a pa clutch member adapted to engage in said link whereby the pivotal m of said clutch member is limited; a said link adapted to engage the tee pulley when said link is released; a adapted to hold said link in its eleva tion arranged to be tripped by the load on the hoisting rope.

19. The combination with a fra pulley having teeth thereon; a link on said frame; a clutch adapted to c the pulley in gripping a rope, mounted on said link; a dog adapte said link normally upward; a trip fo adapted to be actuated by the weig load; and a forwardly-projecting fixed pawl or tooth on said link ad engage the teeth on said pulley whe is released by said dog whereby sa member is drawn into its clamping by the rearward revolution of the p lifted out of its clamping position b ward revolution of the pulley.

20. The combination with a fra pulley having teeth thereon; a link on said frame; a clutch adapted to c the pulley in gripping a rope mounted on said link; a dog adapte said link normally upward; a trip dog adapted to be actuated by the the load; and a pawl on said link a engage the teeth on said pulley whe is released by said dog whereby sa member is drawn into its clamping by the rearward revolution of the p lifted out of its clamping position b ward revolution of the pulley.

21. The combination with a fra pulley having teeth thereon; a link on said frame; a clutch adapted to c the pulley in gripping a rope, mo said link; a dog adapted to h

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lly upward; a trip for said dog adapt- be actuated by the weight of the nd a forwardly-projecting V-shaped awl or tooth on said link adapted to the teeth on said pulley when the link sed by said dog whereby said clutch r is drawn into its clamping position rearward revolution of the pulley and ut of its clamping position by the for- evolution of the pulley.

The combination with a frame, of a having teeth thereon; a link pivoted frame; a clutch adapted to coact with lley in gripping a rope, mounted on k; a dog adapted to hold said link nor- pward; a trip for said dog adapted to ated by the weight of the load; and a said link adapted to engage the teeth pulley when the link is released by g whereby said clutch member is into its clamping position by the rear- evolution of the pulley and lifted out amping position by the forward revo- f the pulley.

The combination with a frame, of a having teeth thereon; a link pivoted frame; a clutch adapted to coact with lley in gripping a rope, pivotally d on said link; a dog adapted to hold k normally upward; a trip for said nd a forwardly-projecting V-shaped awl or tooth on said link adapted to the teeth on said pulley when the link sed by said dog whereby said clutch r is drawn into its clamping position rearward revolution of the pulley and ut of its clamping position by the for- evolution of the pulley.

The combination with a frame, of a having teeth thereon; a link pivoted frame; a clutch adapted to coact with lley in gripping a rope, pivotally d on said link; a dog adapted to hold k normally upward; a trip for said nd a pawl on said link adapted to en- e teeth on said pulley when the link is d by said dog whereby said clutch r is drawn into its clamping position rearward revolution of the pulley and ut of its clamping position by the for- evolution of the pulley.

The combination with a frame, of a having teeth thereon; a link pivoted frame; a clutch adapted to coact with lley in gripping a rope, mounted on nk; a dog adapted to hold said link lly upward; a trip for said dog; and a dly-projecting V-shaped fixed pawl or on said link adapted to engage the n said pulley when the link is released d dog whereby said clutch member is into its clamping position by the rear- evolution of the pulley and lifted out amping position by the forward rev- of the pulley.

26. The combination with a frame, of a pulley having teeth thereon; a link pivoted on said frame; a clutch adapted to coact with the pulley in gripping a rope, mounted on said link; a dog adapted to hold said link normally upward; a trip for said dog; and a pawl on said link adapted to engage the teeth on said pulley when the link is released by said dog whereby said clutch member is drawn into its clamping position by the rearward revolution of the pulley and lifted out of its clamping position by the forward revolution of the pulley.

27. The combination with a frame, of a pulley having teeth thereon; a movably-supported clutch member arranged to coact with the pulley in clamping a rope; a pawl adapted to engage the teeth of said pulley; a dog adapted to hold said pawl out of its engaging position; a trip for said dog adapted to be actuated by the load, said pawl being arranged to engage the teeth of said pulley when released by said dog, whereby on the rearward movement of the pulley the clutch member is drawn into its clamping position and moved therefrom by the forward movement of the pulley and a spring arranged to normally hold the pawl out of its engaging position, the tension of the return spring being insufficient to release said clamping member when clamping a rope.

28. The combination with a frame, of a pulley having teeth thereon; a movable clutch member arranged to coact with the pulley in clamping a rope; means for holding said clutch member yieldingly out of its engaging position; a pawl adapted to engage the teeth of said pulley; means actuated by the load for bringing said pawl into engagement with the teeth of the said pulley, said pawl being adapted on the rearward movement of the pulley to draw the said clutch member into its clamping position, and on the forward movement of the pulley to move said clutch member from its clamping position when the load is discharged.

29. The combination with a frame of a pulley; a movably supported clutch member arranged to coact with the pulley in clamping a rope; means for holding said clutch member yieldingly out of its engaging position; means for connecting said clutch member with said pulley arranged so that on the rearward movement of the pulley, the clutch member is drawn into its clamping position, and on the forward movement of the pulley is moved therefrom, said means for connecting said clutch member to said pulley being brought into engaging position by the load and being automatically moved from its engaging position when the load is released.

30. The combination with a frame, of a pulley having teeth thereon; a link pivoted on said frame; a clutch adapted to coact with

the pulley in gripping a rope, mounted on said link; a dog adapted to hold said link normally upward; a trip for said dog adapted to be actuated by the weight of the load; a pawl on said link adapted to engage the teeth on said pulley when the link is released by said dog whereby said clutch member is drawn into its clamping position by the rearward revolution of the pulley and lifted out of its clamping position by the forward revolution of the pulley; and a trip rope connected to said clutch member.

31. The combination with a frame, of a pulley having teeth thereon; a link pivoted on said frame; a clutch adapted to coact with the pulley in gripping a rope, pivotally mounted on said link; a dog adapted to hold said link normally upward; a trip for said dog; a forwardly-projecting V-shaped fixed pawl or tooth on said link adapted to engage the teeth on said pulley when the link is released by said dog, whereby said clutch member is drawn into its clamping position by the rearward revolution of the pulley and lifted out of its clamping position by the forward revolution of the pulley; and a trip rope connected to said clutch member.

32. The combination with a frame, of a pulley having teeth thereon; a link pivoted on said frame; a clutch adapted to coact with the pulley in gripping a rope, pivotally mounted on said link; a dog adapted to hold said link normally upward; a trip for said dog; a pawl on said link adapted to engage the teeth on said pulley when the link is released by said dog whereby said clutch member is drawn into its clamping position by the rearward revolution of the pulley and lifted out of its clamping position by the forward revolution of the pulley; and a trip rope connected to said clutch member.

33. The combination with a frame, of a pulley having teeth thereon; a link pivoted on said frame; a clutch adapted to coact with the pulley in gripping a rope, mounted on said link; a dog adapted to hold said link normally upward; a trip for said dog; a forwardly-projecting V-shaped fixed pawl or tooth on said link adapted to engage the teeth on said pulley when the link is released by said dog whereby said clutch member is drawn into its clamping position by the rearward revolution of the pulley and lifted out of its clamping position by the forward revolution of the pulley; and a trip rope connected to said clutch member.

34. The combination with a frame, of a pulley having teeth thereon; a link pivoted on said frame; a clutch adapted to coact with the pulley in gripping a rope, mounted on said link; a dog adapted to hold said link normally upward; a trip for said dog; a pawl on said link adapted to engage the teeth on said pulley when the link is released by said dog whereby said clutch member is drawn into its clamping position by ward revolution of the pulley and of its clamping position by the forw lution of the pulley; and a trip r nected to said clutch member.

35. The combination with a fra pulley having teeth thereon; a supported clutch member arranged with the pulley in clamping a rope adapted to engage the teeth of sai a dog adapted to hold said pawl out gaging position; a trip for said dog to be actuated by the load, said pa arranged to engage the teeth of sai when released by said dog, whereb rearward movement of the pulley th member is drawn into its clamping and moved therefrom by the forwar ment of the pulley and a spring arr normally hold the pawl out of its e position, the tension of the return sp ing insufficient to release said clampi ber when clamping a rope; and a t connected to said clutch member.

36. The combination with a fra pulley; a movably supported clutch arranged to coact with the pulley in ing a rope; means for holding said member yieldingly out of its engagi tion; means for connecting said member with said pulley arranged so the rearward movement of the pull clutch member is drawn into its cl position, and on the forward move the pulley is moved therefrom, said me connecting said clutch member to said being brought into engaging position load and being automatically moved f engaging position when the load is re and a trip rope connected to said clutch ber.

37. The combination with a fram pulley having teeth thereon; a m clutch member arranged to coact wi pulley in clamping a rope; means for ing said clutch member yieldingly out engaging position; a pawl adapted to the teeth of said pulley; means actua the load for bringing said pawl into e ment with the teeth of said pulley, sai being adapted on the rearward mov of the pulley to draw the said clutch ber into its clamping position, and forward movement of the pulley to said clutch member from its clamping tion when the load is discharged; and rope connected to said clutch member.

In witness whereof, I have hereunto hand and seal in the presence of tw nesses.

ALLEN P. BOYER. [L.

Witnesses:
LUELLA G. GREENFIELD,
GERTRUDE TALLMAN.

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350

H. A. MYERS.

HOISTING DEVICE.

APPLICATION FILED APR. 4, 1908.

942,735.

Patented Dec. 7, 1

2 SHEETS—SH

Fig. 3.

Fig. 4.

Fig. 2.

Fig. 1.

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2 SHEETS—

Fig. 5.

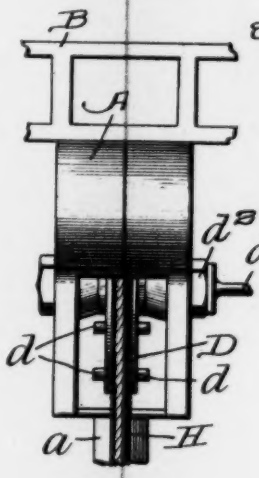


Fig. 6.

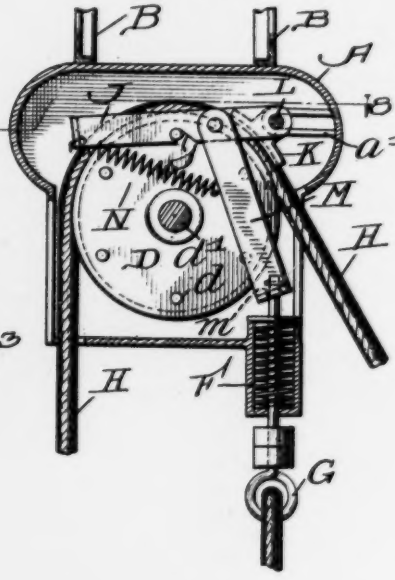


Fig. 8.

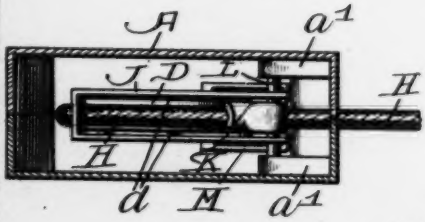
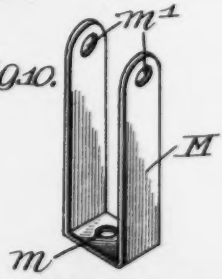


Fig. 9.

Fig. 10.



Witnesses:

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Att

NITED STATES PATENT OFFICE.

HUBERT A. MYERS, OF GOSHEN, INDIANA.

HOISTING DEVICE.

35. Specification of Letters Patent. Patented Dec. 7, 1909.

Application filed April 4, 1908. Serial No. 425,146.

hom it may concern:

known that I, HUBERT A. MYERS, a of the United States of America, and of Goshen, Elkhart county, Indiana, vented a certain new and useful Im- ent in Hoisting Devices, of which the ng is a specification.

nvention relates to hoisting devices character in which an overhead or pulley is employed, provided with ing cable, and in which means are d for automatically locking the or pulley, and the cable as well, backward movement when the pull cable is relaxed, whereby the object oisted can be raised and allowed to securely at any desired level, per- the hoisting device to be moved hori- to discharge the load at some point less remote from the place where icked up.

object of my invention is the pro- f an improved hoisting device of the ng general character, having im- means for automatically checking of the object being hoisted, when the the hoisting rope or cable is relaxed, racterized by a simple and efficient construction, as well as certain de- improvement, whereby the device is onomical to manufacture and satis- in use.

e foregoing and other useful ends, ntion consists in matters hereinafter h and claimed.

e accompanying drawings, Figure 1 tical cross section of a hoisting de- bodying the principles of my in- Fig. 2 is a vertical longitudinal on line 2—2 in Fig. 1. Fig. 3 is a de elevation of the sheave or pulley. s a detail sectional view of the lost connection between the locking dog e casing or housing of the device. s a side elevation of the said hoist- vice, certain upper portions thereof roken away for convenience of illus- Fig. 6 is a view similar to Fig. 1, wing the mechanism in locked con- Fig. 7 is a detail view of the eye- which the hoisting cable is attached. a horizontal cross section on line Fig. 6. Fig. 9 is a perspective of g. Fig. 10 is a perspective of hat connects the eye-bolt with g. Fig. 11 is a perspective of the brake shoe that bears upon the hoisting cable to automatically check the fall of the object being hoisted, when the pull on the cable is relaxed, as will hereinafter more fully appear.

As thus illustrated, my invention comprises a casing or housing A, constructed in any suitable manner, as by making it in sections and bolting the same together. At its top the said housing is provided with a truck B having removable wheels *b* adapted to travel along the double steel track or way C. Within the housing is a sheave or pulley D having pins *d* on the opposite sides thereof, arranged in a circle. The said sheave or pulley runs on an arbor or axle *d'* extending through and supported in the sides of the housing. Said arbor is threaded at its ends and provided with nuts d^2 having eyes d^3. To these eyes are attached the shift ropes E, as shown. With this arrangement, the arbor or axle serves as a connection for clamping together the two halves of the housing. Also, it will be seen, the axis of the sheave or pulley extends in the direction of the movement of the hoisting device along the track or way C. The housing is provided with a socket or seat *a* for the spring F, which latter supports the eye-bolt G. One end of the hoisting cable H is secured to said eye-bolt, and is arranged to run over the sheave or pulley D and then to the ground where it can be operated. A tackle or sheave I rests in the slack or sag of the said cable, and may be provided with any suitable means for securing it to the object to be hoisted. On the inner surface of the housing, at opposite sides thereof, guides *a'* are provided, as shown.

The yoke-like double dog J embraces the sheave or pulley and is provided with notches *j* that will catch the pins when the sheave or pulley revolves backward, but will not interfere with the forward rotation thereof when the cable is operated to do the hoisting. The bifurcated end of said double dog is provided with pivot holes *j'*, and at a distance back therefrom with holes j^2. A brake-shoe K is embraced between the sides of said double dog, and a pivot pin L extends through the said brake-shoe, as well as through the openings *j'*. This pin is supported in the guides *a'*, and in this way a lost motion connection is provided between the double dog and the housing, the brake-shoe moving back and forth with the double

dog. Thus the brake shoe is supported directly on the housing and not on the dog, and the latter is also on the housing and not on the shoe. A yoke M embraces the sheave or pulley and connects the locking dog J with the upper end of the eye-bolt G. Normally, the parts are as shown in Fig. 1, there being no load on the hoisting cable. This normal condition of the parts is maintained through the coöperation of the springs F and I, which latter connects the dog J with the housing, and keeps the pin L at the outer ends of the guides *a'*, as shown in Fig. 1. When the cable is loaded, however, and the pull on the cable is relaxed, then the parts assume the positions shown in Fig. 6. This is due to the fact that the slight drop of the load, when the pull on the cable is relaxed, causes two of the pins *d* to catch in the notches *j*, the spring F being at this time compressed by the weight carried by the cable. The back pull of the sheave or pulley causes the shoe K to bear hard upon the cable at the point where the same starts over the sheave or pulley, and thus the load is checked against falling, the action being purely automatic in this respect. When the cable is running light, then the sheave or pulley can be rotated in either direction.

Any suitable, known or approved expedient can be employed for releasing the load from the hoisting cable.

It is an important consideration of my invention that, with my improved construction, the brake-shoe K engages the rope or cable where the same starts over the sheave, as this gives increased gripping surface to the sheave, which tends to hold the rope or cable more securely than if the shoe were at the other side of the sheave.

What I claim as my invention is:

1. In a hoisting device, a sheave or pulley, a hoisting cable therefor, means for securing one end of the cable to the said hoisting device, and a brake-shoe for engaging the cable where the same starts over the sheave or pulley from the end thereof where the power is applied, and means operated by the sheave and the weight on the cable for operating said brake-shoe to check the fall of the load.

2. In a hoisting device, a sheave or pulley, a hoisting cable therefor, means for securing one end of the cable to the said hoisting device, a housing, a locking dog pivoted directly on the housing, the axis of the said sheave or pulley and locking dog being fixed relative to each other, means on the sheave or pulley for engaging the dog, and means on the sheave for communicating the weight of the load to said dog to bring the latter into operative relation to said sheave or pulley.

3. In a hoisting device, a sheave or pulley, a hoisting cable therefor, means for securing one end of the cable to the said device, a locking dog, means on the or pulley for engaging said dog, to lock the sheave, and a brake-shoe by said dog to engage the cable same starts over the sheave or pu the end thereof where the power to check the fall of the load.

4. In a hoisting device, a sheave a hoisting cable therefor, a pivot dog for said sheave or pulley, and throwing the load directly on the at the outer side of the pivot, so th sustains the weight thereof, to brin ter into operative relation to said pulley.

5. In a hoisting device, a housing or pulley, a hoisting cable therefor shoe provided with a pivot having connection with said housing, and utilizing the weight of the load to said shoe into engagement with sai

6. In a hoisting device, a housing or pulley, a hoisting cable therefor shoe slidably supported on the hou means operated by the sheave for the backward rotation of the pulley to draw the said shoe int ment with the cable.

7. In a hoisting device, a sheave a hoisting cable therefor, a yoke-li dog embracing the top of the pulley, means on the sheave or p engaging the yoke, and means for s the load on the outer portion of sa

8. In a hoisting device, a sheave a hoisting cable therefor, a locking said sheave or pulley, means on t for engaging said dog, and means the cable when loaded exerts a dir ward pull on said dog.

9. In a hoisting device, a sheave a hoisting cable therefor, a locking said sheave or pulley, means on the engaging said dog, and means for the weight of the load for depres dog, the entire connecting medium the dog and cable having only do movement to bring the dog into relation to the sheave or pulley.

10. In a hoisting device, a sheave ley, a hoisting cable therefor, a br for engaging said cable, pivoted at only and a sliding connection by which the backward rotation of the or pulley brings the said shoe into ment with the cable, as set forth.

11. In a hoisting device, a sheave ley, a hoisting cable therefor, a locking dog for said sheave or pulley for connecting the end of the cable dog, and a spring for keeping the normally raised.

12. In a hoisting device, a ho sheave or pulley, a hoisting cable th

cking dog for said pulley, a brake-shoe tuated by said dog, and a spring connect- g the dog with the said housing to keep e brake-shoe normally out of engagement ith said cable.

13. In a hoisting device, a two part hous- g, an arbor extending through the two rts to bind the same together, a sheave or lley on said arbor, a hoisting cable for id sheave or pulley, a shift rope attached the end of said arbor, an automatic brake echanism supported on the two parts of e housing, and means for supporting the using for horizontal traveling movement.

14. In a hoisting device, a sheave or pul- y, a housing therefor, a hoisting cable for e same, a locking dog for said sheave or lley, guides on said housing, a pivot pin r said dog, slidable in said guides, and a ake-shoe on said pin, adapted to engage e cable to check the fall of the load.

15. In a hoisting device, a sheave or pul- y, a hoisting cable therefor, pins on the op- site sides of said sheave or pulley, and a ke-like locking dog pivoted at one end d provided at each side with a notch for engaging said pins, the sides of the yoke embracing the said sheave or pulley.

16. The combination of a housing, guides on the housing, a sheave or pulley in the housing, a hoisting cable for said sheave or pulley, a dog pivoted to slide in said guides, a brake-shoe on said pivot, a spring connecting the dog with the housing to keep the brake-shoe normally out of engagement with the cable, a link connecting the end of the cable with said dog, and a spring for keeping the link and dog normally raised.

17. The improved hoisting device, comprising a brake-shoe operative to engage the cable at the point specified, a sheave, means on the sheave for operating said brake-shoe, and means for securing one end of the cable to said device, substantially as shown and described.

Signed by me at Chicago, Illinois, this 23rd day of March 1908.

HUBERT A. MYERS.

Witnesses:
ALBERT J. SAUSER.
SARAH LEWIS.

TORN PAGES

Certific
clerk

United States of America
District of Indiana. } ss:

I, Noble C. Butler, clerk of the District Court of the United States for the District of Indiana, do hereby certify that the above and foregoing is a full, true and complete transcript of the record and proceedings, as described in the praecipe filed by the complainant, in the cause of The Goshen Manufacturing Company against the Hubert A. Myers Manufacturing Company, as fully as the same appear upon the records and files now in my office.

Witness my hand and the seal of said Court, at Indianapolis in said District this 30th day of June, 1913.

NOBLE C. BUTLER,
Clerk.

(Seal)

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UNITED STATES CIRCUIT COURT OF APPEALS

SEVENTH CIRCUIT

GOSHEN MANUFACTURING COMPANY,

Complainant-Appellant,

vs.

HUBERT A. HYERS MANUFACTURING COMPANY and HUBERT A. HYERS,

Defendants-Appellees.

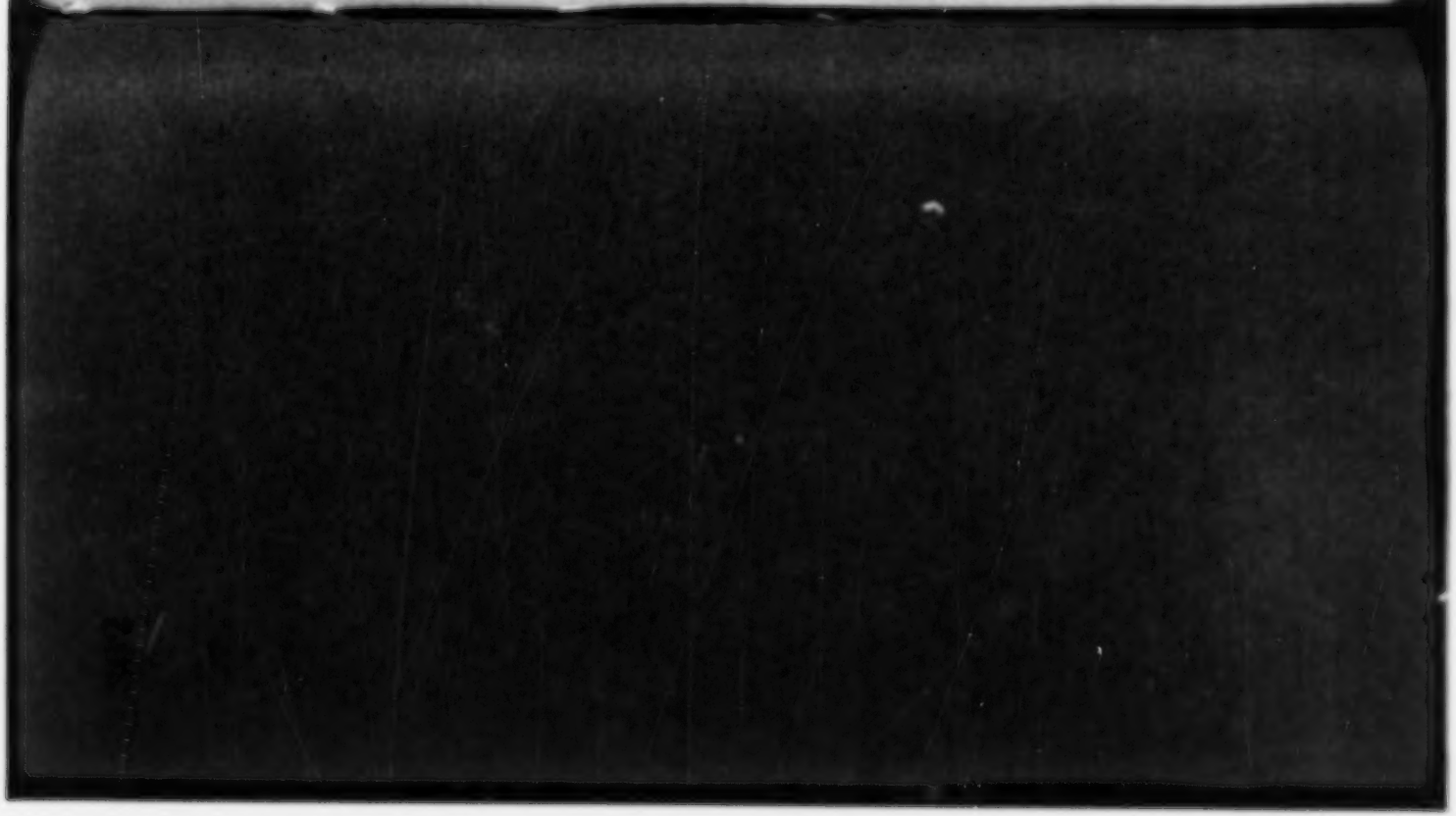
In Equity No. [illegible]

Proceedings of Defendants Against Complainant in the District Court

CHAPPELL & BARR,
Counsel for Appellees.

V. B. LOUDENBACK,
Counsel for Appellees.

FILED



Complaint. 1

PLEAS AND PROCEEDINGS Before the HONORABLE JAMES S. DODGE, Judge of the Thirty-fourth Judicial Circuit of the State of Indiana, and Judge EX-OFFICIO of the Elkhart Circuit Court, at a regular term of said Court, begun, held and continued at the Court House in the City of Goshen, Elkhart County, Indiana, commencing on Monday, October 3rd, 1910.

THE HUBERT A. MYERS MANUFACTURING COMPANY
vs.
ALLEN P. BOYER.

Be it remembered that on the 12th day of September, 1910, the above named plaintiff by its attorneys Wood & Aiken and Deahl & Deahl filed a complaint with the Clerk of the Elkhart Circuit Court, which complaint was in words and figures as follows, to-wit.:

State of Indiana, } ss. In the Elkhart Circuit Court.
Elkhart County. }

The Hubert A. Myers Manufacturing Company,
vs.
Allen P. Boyer. } Complaint.

The above named plaintiff complains of the above named defendant and says:

That the plaintiff is a corporation duly organized under the laws of the State of Indiana, and is now, and has been, for more than five years last past, engaged in the business of manufacturing hay cars. That its place of business is in the City of Warsaw, Kosciusko County, Indiana; that on or about the 27th day of October, 1909, the defendant wrongfully and maliciously and with intent to injure plaintiff and destroy its said business of the manufacture and sale of hay cars, spoke of and concerning plaintiff in relation to its said business and concerning the articles manufactured by it in the said business, in the following false and defamatory manner:

"The Hubert A. Meyers Manufacturing Company is infringing on the patent owned by the Goshen Manufacturing Company; it will have to cease manufacturing hay cars and carriers and to render an account for all that it has sold; the courts will hold it liable as well as the dealers and farmers who sell and use such hay cars and carriers, and I shall prosecute them for it;" thereby meaning that no person could buy the hay cars made by plaintiff or use them without subjecting himself to a law suit which defendant would bring.

Plaintiff further says that on the 27th day of October, 1909, the defendant spoke of and concerning plaintiff in relation to its said business in the further false and defamatory manner:

"Yesterday the Goshen Manufacturing Company had at their office a number of expert patent law specialists for consultation and advice, and as a result, they have already served notice on the Hubert A. Myers Manufacturing Company of Warsaw to cease manufacturing their hay carrier and to render an account for all that they have sold. Notice will also be served on several other hay tool manufacturers, who are infringing on the patent owned by the Goshen Manufacturing Company. This is a matter in which dealers and farmers who sell and use other cross draft hay carriers are deeply interested, as the courts hold them liable as well as the infringing manufacturer." Said defendant also caused said statement to be published in the Goshen Daily News-Times and other newspapers. That the hay cars or carriers which plaintiff manufactures do not infringe on the aforesaid letters patent, or on any letters patent belonging to the Goshen Manufacturing Company; that the defendant knew they were not an infringement, but maliciously made said statement with intent to prevent the sale thereof. That plaintiff, by reason of said false, defamatory and malicious statements and publication, was prevented from making a sale of its letters patents and manufactured hay cars to one V. L. Nye who had offered the sum of Five Thousand Dollars therefor and said defendant with the malicious intent to injure plaintiff caused a copy of the newspaper in which he had caused his said statement to be published to be sent to said Nye and said Nye on receipt of said paper and on account of defendant's said threat of a lawsuit, refused to complete the pur-

chase of said hay cars and letters patent from plaintiff to plaintiff's great damage.

That thereafter plaintiff had entered into an agreement with one Aaron Hartzler for the sale to him of its manufactured hay cars and letters patent therefore, and because of said statements and publications so made by defendant said Hartzler refused to carry out said agreement and plaintiff again lost the sale of said articles to its great damage.

That by reason of the premises, plaintiff has been unable to sell said articles to persons who would otherwise have bought them, and its business, which theretofore had produced a profit to plaintiff's stockholders of $3000.00 and more per year, has been entirely destroyed and plaintiff has been unable to sell any of its manufactured hay cars, to the damage to the plaintiff in the sum of $10,000.00.

Wherefore, plaintiff demands judgment for the sum of $10,000.00 damages and for costs and all other proper relief.

DEAHL & DEAHL,
WOOD & AIKEN,
Attorneys for Plaintiff.

ENDORSED: No. 13050. Elkhart Circuit Court. The Hubert A. Myers Manufacturing Company, Plaintiff,—vs.—Allen P. Boyer, Defendant. Complaint. Filed September 12th, 1910. Geo. W. Fleming, Clerk. Wood & Aiken, Warsaw, Indiana, Attorneys for Plaintiff.

Be it remembered that afterwards, to-wit, on the 7th day of October, 1910, the same being the fifth Judicial day of the October, 1910, term of the Elkhart Circuit Court at the same place and before the same Honorable Judge aforesaid, occurred the following proceedings in the following cause, to-wit:—

The Hubert A. Myers Manufacturing Company,
vs.
Allen P. Boyer.
} Cause No. 13050.

Come the parties, by their attorneys, and the defendant now files his motion for an order of this Court compelling the

plaintiff to make its complaint more specific, said motion being set out as follows, to-wit:

State of Indiana, } ss. In the Elkhart Circuit Court.
Elkhart County. }

The Hubert A. Myers Manufacturing Company,
vs.
Allen P. Boyer.

Motion to make complaint more specific and certain.

The defendant moves the Court for an order requiring the plaintiff to make its complaint more definite and certain by showing and naming the persons to whom the false and defamitory matter alleged in its complaint was spoken and the time and place the same was spoken.

Also the defendant moves the Court for an order requiring the plaintiff to make its complaint more specific and certain by naming the time when it has been offered by one V. L. Nye to buy its letters patent and to give the date and number of said letters patent, and also to name the date when the plaintiff had entered into an agreement with one Aaron Hartzler for the sale to him of its manufactured hay cars and letters patent therefor.

E. E. MUMMERT,
Attorneys for Defendant.

ENDORSED: No. 13050. The Hubert A. Myers Manufacturing Company vs. Allen P. Boyer. In the Elkhart Circuit Court. October Term, 1910. Motion to make complaint more definite and certain. Filed in open Court, Oct. 7th, 1910. Geo. W. Fleming, Clerk Elkhart Circuit Court.

Which motion the Court, upon due consideration, overrules, to which ruling of the Court the said defendant, at the time, by counsel, duly excepts.

Be it further remembered that afterwards, to-wit—On the 24th day of October, 1910, the same being the nineteenth Judicial day of the October, 1910, Term of the Elkhart Circuit Court at the same place and before the same Honorable Judge

aforesaid occurred the following further proceedings in the above entitled cause, to-wit

The Hubert A. Myers Manufacturing Company,
vs.
Allen P. Boyer. } Cause No. 13050.

Come the parties by their attorneys, and the defendant now files his demurrer to the complainant herein, the same being set out as follows:—

State of Indiana } In the Elkhart Circuit Court.
Elkhart County. } October Term, 1910.

The Hubert A. Myers Manufacturing Company,
vs.
Allen P. Boyer.

The defendant demurs to the plaintiff's complaint for the reason that the complaint does not state facts sufficient to constitute a cause of action.

E. E. MUMMERT,
Attorney for Defendant.

ENDORSED:—No. 13050. The Hubert A. Myers Manufacturing Company vs. Allen P. Boyer. Demurrer to complaint. Filed in open court. October 24th, 1910. Geo. W. Fleming, Clerk Elkhart Circuit Court. E. E. Mummert, Attorney for Defendant.

State of Indiana, } ss.
Elkhart County. }

I, Chas. A. Aitken, Clerk of the Elkhart Circuit Court within and for the said County of Elkhart, and State of Indiana, do hereby certify that the foregoing is a true and correct copy of the proceedings had in the Cause No. 13050, Hubert A.

Myers Manufacturing Company vs. Allen P. Boyer as the same now appears on record and on file in my office.

In Witness Whereof, I have hereunto subscribed my name, and affixed the seal of said Court, at Goshen, Indiana, this 25th day of June, 1912.

SEAL

CHAS. A. AITKEN,
Clerk Elkhart Circuit Court.

State of Indiana, } ss.
Elkhart County. }

Elmer E. Mummert being first duly sworn, upon his oath deposes and says: That he is the attorney for the Goshen Manufacturing Company and of Allen P. Boyer of the city of Goshen, Indiana, and that he was acting as such at the time of the filing of the case of The Hubert A. Myers Manufacturing Company against said Allen P. Boyer, same being cause No. 13050 on the docket of the Elkhart Circuit Court of Elkhart County, Indiana.

That after the filing of the above entitled case said affiant entered his appearance for the said defendant, Allen P. Boyer, who is the President of the above named, The Goshen Manufacturing Company.

That said affiant filed the pleadings in said cause from time to time as set out in the transcript of said cause hereto attached.

Affiant further says that at each term of court since the said cause was filed, upon the calling of the case by the court, the case was continued from time to time and from term to term upon the statements made to the court by affiant as attorney for said defendant and by Deahl & Deahl of counsel for plaintiff showing to the court that other cases were then pending between the same parties, in the United States District Court at Indianapolis, Indiana, and involving the same matter set out in the plaintiff's case herein referred to.

That the disposition of the cases in the United States District Court would in all probability determine the issues and the disposition of the above entitled cause, and that upon such statements made by counsel and by mutual agreement of counsel the said cause was continued from term to term as above

set out.

That the said case is still pending in the Elkhart Circuit Court on demurrer of defendant, and awaiting the final determination of the said cases in the United States District Court, and further affiant sayeth not.

ELMER E. MUMMERT.

Subscribed and sworn to before me this
25th day of June, 1912.

GEO. R. HARPER,
Notary Public.

My commission expires May 10, 1913.

UNITED STATES CIRCUIT COURT OF APPEALS.

For the Seventh Circuit.

I, Edward M. Hollway, Clerk of the United States Circuit ourt of Appeals for the Seventh Circuit, do hereby certify at the foregoing printed pages, numbered from 1 to 369, clusive, contain a true copy of the printed record, filed ugust 20, 1913, on which this cause was argued, heard and etermined in the case of

Goshen Manufacturing Company

vs.

ubert A. Myers Manufacturing Company and Hubert A. Myers.

o. 2027, October Term 1912, as the same remains upon the les and records of the United States Circuit Court of Apeals for the seventh Circuit.

In testimony whereof I hereunto subscribe my name and fix the seal of said United States Circuit Court of Appeals r the Seventh Circuit, at the City of Chicago, this thireenth day of January, A. D. 1915.

EDWARD M. HOLLOWAY,

(Seal) *Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.*

At a regular term of the United States Circuit Court of ppeals for the Seventh Circuit, begun and held at the United tates Court Room, in the City of Chicago, in said Seventh ircuit on the seventh day of October, 1913, of the October erm, in the year of our Lord, one thousand nine hundred nd thirteen and of our Independence the one hundred and irty-eighth year.

And afterwards, to-wit: On the tenth day of October, 1913, the October Term aforesaid, came the appellant by its ounsel, Mr. Fred L. Chappell and Mr. Otis A. Earl, and led in the office of the Clerk of this Court their appearance, hich appearance is in the words and figures following, to-it:—

UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

o. ____ October Term, 19....

Goshen Manufacturing Company
Appellant

vs.

Hubert A. Meyers Manufacturing Co. *et al.*
Appellee.

The Clerk will enter my appearance as counsel for the ap-ellant.

FRED L. CHAPPELL
OTIS A. EARL
Chase Block,
Kalamazoo, Mich.

Endorsed: Filed Oct. 10, 1913. Edward M. Holloway, Clerk.

And afterwards, to-wit: On the twenty-first day of Octo-er, 1913, in the October Term last aforesaid, the following rther proceedings were had and entered of record, to-wit:

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Tuesday, October 21, 1913.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:
Hon. Francis E. Baker, Circuit Judge, presiding.
Hon. William H. Seaman, Circuit Judge.
Hon. Christian C. Kohlsaat, Circuit Judge.
Edward M. Holloway, Clerk.
Luman T. Hoy, Marshal.

2027 Goshen Manufacturing Company *vs* Herbert A. Myers Manufacturing Company, *et al.* } Appeal from the District Court of the United States for the District of Indiana.

Upon the filing of a stipulation of counsel, it is now hereby ordered that the printed copy of proceedings in the case of Herbert A. Myers Manufacturing Co. vs. Allen P. Boyer in the Elkhart Circuit Court for the State of Indiana, attached to the said stipulation be received and filed in this cause and may constitute a part of the record herein, as though it had been duly certified by the Court below.

And afterwards, to-wit: On the sixth day of January 1914, in the October Term last aforesaid, the following further proceedings were had and entered of record, to-wit:—

Tuesday, January 6, 1914.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:
Hon. Francis E. Baker, Circuit Judge, presiding.
Hon. William H. Seaman, Circuit Judge.
Hon. Christian C. Kohlsaat, Circuit Judge.
Edward M. Holloway, Clerk.
Luman T. Hoy, Marshal.

oshen Manufacturing Company
27 *vs*
bert A. Myers Manufacturing Company, *et al.*
} Appeal from the District Court of the United States for the District of Indiana.

It is ordered by the Court that this cause be, and the same hereby set down for hearing on January 21, 1914.

And afterwards, to-wit: On the twenty-first day of January, 1914, in the October Term last aforesaid, the following further proceedings were had and entered of record, to-wit:—

Wednesday, January 21, 1914.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:

Hon. Francis E. Baker, Circuit Judge, presiding.
Hon. Christian C. Kohlsaat, Circuit Judge.
Hon. Julian W. Mack, Circuit Judge.
Edward M. Holloway, Clerk.
Laman T. Hoy, Marshal.

oshen Manufacturing Company
27 *vs*
bert A. Myers Manufacturing Company, *et al.*
} Appeal from the District Court of the United States for the District of Indiana.

Now this day come the parties by their counsel and this cause now comes on to be heard on the printed record and briefs of counsel, and on oral argument by Mr. Frost L. Trappell, counsel for appellant, and by Mr. V. H. Lockwood, counsel for appellees, and the Court having heard the same takes this matter under advisement.

Goshen Manufacturing Company
2027 vs
Hubert A. Myers Manufacturing Company, *et al.*
} Appeal from the District Co of the United States for t District of Indiana.

On motion of Mr. V. H. Lockwood, counsel for appell counsel for appellant present and consenting thereto, it now here ordered that the file wrapper and contents of lett patent No. 876,991 be filed, and the same is hereby made part of the record in this cause in this Court. It is furth ordered that appellant be, and is hereby allowed until Feb ary 7, 1914, to file an additional brief herein.

And afterwards, on the same day, to-wit: On the twen first day of January, 1914, in the October Term last afo said, there was filed in the office of the Clerk of this Court certain Defendants' Exhibit A, being the File Wrapper a Contents of letters patent No. 876,991, which said Defendant Exhibit A is not copied here nor made a part of this record.

And afterwards, to-wit: On the fourteenth day of Ap 1914, in the October Term last aforesaid, there was filed the office of the Clerk of this Court the Opinion of the Co in the words and figures following, to-wit:—

IN THE UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

January Session, October Term, 1913.

Goshen Manufacturing Company, *Appellant*, vs. Hubert A. Myers Manufacturing Company and Hubert A. Myers, *Appellees*. } Appeal from the District Court of the United States for the District of Indiana.

Before Baker, Kohlsaat and Mack, Circuit Judges.

Mack, Circuit Judge, delivered the opinion of the Court.

The first and decisive question raised in this appeal from a decree dismissing a bill in equity after a full hearing, is whether a court of equity or a court of law is the proper forum in which to determine complainant's rights.

The bill, filed October 3, 1910, charged that defendants infringed letters patent for hoisting pulleys No. 876991, that they "still continue so to do", and that notice thereof and request to desist were given and disregarded.

Defendants, after setting up among other defenses invalidity of patent and non infringement, state in their answers that defendant Myers had not been connected with the defendant company in any way, as director, officer, stockholder or employe, since December, 1909; that defendant company "has not manufactured any hoisting device of any kind whatsoever since the month of October, 1909, and that since the month of March, 1910, this defendant has not sold or had for sale any hoisting devices of any sort whatsoever, and that the complainant had knowledge of these facts prior to the bringing of this suit for an injunction." They further deny that they had avowed any determination to continue to manufacture and sell any such hoisting machines.

It is elementary that for infringement of a patent, as for

any trespass, damages are recoverable by action at law; th
as this remedy is ordinarily adequate, a court of equity w
not lend its aid to enjoin further infringement, unless su
further infringement be either actually threatened or reas
ably apprehended. *Kennicott Water Softener* v. *Bain,* 1
Fed. 520; *Chadeloid Co.* v. *Jackson,* 203 Fed. 993. As th
court said in the Bain case, *supra,*

> "The question is a question of fact, viz: assuming th
> the patent is valid, and that appellee had infringed, a
> that the infringement had ceased before the bill was fil
> * * * did appellant, when the bill was filed, have a
> well-grounded apprehension that the infringement wou
> be repeated?"

The letters patent in question were applied for in 19
were issued on January 21, 1908, to one Boyer, complainant
president, as assignee of defendant Myers and were a
signed, together with all rights of action for infringement,
September, 1910, to complainant after the action by defe
ant company against Boyer, hereinafter referred to, had be
begun.

In 1907, defendant Myers induced some business men
Warsaw, Indiana, to join with him in organizing defend
corporation for the manufacture of swings, ladders and h
carriers. At that time he showed a hay carrier with a hoi
ing device which he stated was an invention different fr
and superior to that theretofore sold by him to Boyer.
1908 he applied for letters patent on this hoisting devi
they were issued in December, 1909, No. 942735, and are own
by the defendant company.

This company began manufacturing only ladders and la
swings. It made its first hay carriers, 25 in number, in t
spring of 1908. In the fall of that year it prepared to ma
500 more. 300 of these were sold that winter and spri
the other 200 were never completed by defendant compa
but were disposed of as hereinafter stated. In August, 19
it contracted to manufacture and sell to one Diedrich 500 a
ditional carriers for the season of 1910.

In October, 1909, however, complainant published a ne
paper advertisement and sent direct notice to the defend
company, claiming that its carriers infringed upon the co
plainant's patent rights. As a result of this notice and t
publication of the advertisement, defendant company was u
able to obtain additional capital from parties with whom

tions were then pending or to secure bank loans, there-
endering it impossible for it to go on in the business. It
ed its contract obligations with Diedrich by permitting
to use its shop and materials to finish up the 200 carriers
re referred to. Diedrich shipped these out during the
er, the final shipment being made not later than March,

December, 1909, defendant Myers sold all of his stock
he defendant company to the other stockholders and
eafter had no connection of any kind with it or with the
nufacture, use or sale of hay carriers. Defendant com-
y neither manufactured nor sold any carriers after the
ce of infringement; its president and general manager
fied complainant's president and manager in February,
), that it was practically dead; in March, 1910, it sold its
re plant and all of its property, except only the letters
ent, No. 942735; since then it has been completely out of
iness and without factory or office. In the latter part of
9, after the notice of infringement, it had decided not to
nufacture any more carriers.

n Septemebr 12, 1910, defendant company sued Boyer in
State court for the injury to its business caused by the
ged defamatory advertisement published a year before.
s case has been continued from time to time on applica-
n of the defendant therein because of the pendency of the
sent litigation. The unsworn complaint, signed only by
attorneys at law, filed in the State court, begins with the
gation "that the plaintiff is a corporation duly organized
ler the laws of the State of Indiana and is now and has
n for more than five years last past engaged in the busi-
s of manufacturing hay cars."

The foregoing facts would seem to demonstrate clearly
t, as to defendant Myers since December, 1909, and as to
fendant company since March, 1910, at the latest, no in-
ngement of complainant's rights has been committed or
reatened; and, but for three matters to be considered, none
uld reasonably be apprehended.

Complainant, however, urges that 1st, the allegation in the
nplaint filed three weeks before the present proceedings
re begun, that defendant company "is now engaged in the
nufacture of hay cars." 2nd, the continued ownership by
fendant company of the letters patent No. 942735, under
ich it claims to have manufactured and which complainant

says are, at best, good only for certain improvements a
therefore unavailable except in connection with its pate
rights, and 3rd, defendant's assertion in this proceeding
the invalidity of complainant's patents and non-infring
ment, separately and together furnish sufficient ground f
apprehension to justify the intervention of a court of equit

In our judgment, this contention cannot be sustained. T
unsworn allegation in the complaint is not one of intent b
of existing fact; it is so completely contradicted by the ev
dence that it must be deemed to have been an inadverte
as it was an incorrect, statement by the attorneys, conce
edly without binding force and clearly with but slight ev
dentiary value.

The continued ownership of the patent or even an attem
to sell it would be but a justifiable exercise of defendan
rights. Whatever the scope of this patent, it belongs to de
fendant, not to complainant; this ownership, whether retain
by defendant or disposed of to another, prevents complai
ant from adopting the improvement embodied in the pate
and, during the period between the expiration of the two pa
ents, will give the defendant or its successor in title the e
clusive right to make the improved carriers.

As to the answer filed in this suit; if, for any reason, t
defense of an adequate remedy at law should have failed, t
other defenses therein urged of invalidity and non-infring
ment would have been essential to save defendant both fro
payment of damages on account of the hay carriers admitted
sold by it and from the dismissal of the action in the Sta
court.

Neither separately nor jointly, therefore, do the facts urg
by complainant furnish a sufficient basis for any we
grounded fear of further infringement; at best they woul
justify an apprehension that if, in some proper court pr
ceeding, defendant's contentions should ultimately be uphe
it might then, and only then, not unlawfully, however, b
legally resume the hay carrier business.

Complainant brought no such proceedings. Thereupon de
fendant company endeavored to test its legal rights by th
action in the State court. If complainant, for any reaso
was dissatisfied with this forum, it could have sued at law i
the federal court. Defendant company's contention fro
the beginning, that an action at law with a jury trial woul
afford adequate relief if complainant's rights were violate

s been fully sustained by the evidence. The decree must, erefore, be

AFFIRMED.

A true Copy.
Teste:

.....

Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.

And afterwards, on the same day, to-wit: On the fourenth day of April, 1914, in the October Term last aforeid, the following further proceedings were had and entered record, to-wit:—

Tuesday, April 14, 1914.

Court met pursuant to adjournment and was opened by oclamation of crier.

Present:
Hon. Francis E. Baker, Circuit Judge, presiding.
Hon. William H. Seaman, Circuit Judge.
Hon. Julian W. Mack, Circuit Judge.
Edward M. Holloway, Clerk.
Luman T. Hoy, Marshal.

Before:
Hon. Francis E. Baker, Circuit Judge.
Hon. Christian C. Kohlsaat, Circuit Judge.
Hon. Julian W. Mack, Circuit Judge.

oshen Manufacturing Company
27 *vs.*
ubert A. Myers Manufacturing Company and Hubert A. Myers.

} Appeal from the District Court of the United States for the District of Indiana.

This cause came on to be heard on the transcript of the cord from the District Court of the United States for the istrict of Indiana, and was argued by counsel.

On consideration whereof, It is now here ordered, adjudged id decreed by this Court that the decree of the said Disict Court in this cause be, and the same is hereby affirmed ith costs.

And afterwards, to-wit: On the eighth day of May, 1914, in the October Term last aforesaid, there was filed in the office of the Clerk of this Court a certain Petition for Rehearing, which said Petition for Rehearing is not copied here.

And afterwards, to-wit: On the twelfth day of May, 1914, in the October Term last aforesaid, the following further proceedings were had and entered of record, to-wit:—

Tuesday, May 12, 1914.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:

Hon. Francis E. Baker, Circuit Judge, presiding.
Hon. William H. Seaman, Circuit Judge.
Hon. Julian W. Mack, Circuit Judge.
Edward M. Holloway, Clerk.
Luman T. Hoy, Marshal.

Before:

Hon. Francis E. Baker, Circuit Judge, presiding.
Hon. Christian C. Kohlsaat, Circuit Judge.
Hon. Julian W. Mack, Circuit Judge.

Goshen Manufacturing Company
2027 *vs.*
Hubert A. Myers Manufacturing Company, *et al.*

Appeal from the District Court of the United States for the District of Indiana.

It is ordered by the Court that the petition for a rehearing in this cause be, and the same is hereby overruled.

And afterwards, to-wit: On the thirtieth day of June, 1914, in the October Term last aforesaid, there was filed in the office of the Clerk of this Court a certain Motion to retax Costs, which said Motion is in the words and figures following, to-wit:

UNITED STATES CIRCUIT COURT OF APPEALS,

For the Seventh Circuit.

Goshen Manufacturing Company, *Complainant-Appellant,* *vs.* Hubert A. Myers Manufacturing Company, *et al.,* *Defendants-Appellees.*	In Equity No. 2027.

Now comes the complainant-appellant and moves the Court to retax the costs in the above entitled cause in so far as concerns the item:

"Preparing the record for the printer, indexing the same, supervising the printing and distributing the copies, for each printed page of the record and index,—$75.75."

This motion is based on the files and on the affidavit of Fred L. Chappell hereto attached.

FRED L. CHAPELL
Counsel for Complainant-Appellant.

June 27, 1914.

UNITED STATES CIRCUIT COURT OF APPEALS,

For the Seventh Circuit.

Goshen Manufacturing Company, *Complainant-Appellant,* *vs.* Hubert A. Myers Manufacturing Company, *et al.,* *Defendants-Appellees.*	In Equity No. 2027.

State of Michigan, } ss.
County of Kalamazoo }

Fred L. Chappell, being duly sworn, deposes and says that he is counsel for complainant-appellant in the above entitled cause.

Deponent states that for the purpose of preparing the

transcript of record on the appeal to this Court, there were furnished to the Clerk of the Court twenty-five copies each of complainant's complete record and of defendant's complete record, printed for use in the Court below, together with twenty-five copies of the necessary patent copies. With the addition of the appeal papers of complainant this constituted the record on appeal, when bound and indexed under direction of the clerk.

Deponent states that he was counsel for appellant in the case of McCreery Engineering Company vs. Massachusetts Fan Company, et al., pending in the United States Circuit Court of Appeals for the First Circuit, reported at 195 Fed. Rep. 498; that in printing the record on appeal in this case there was furnished to the Clerk of the said Court at Boston, substantially the same portions of the printed record as were furnished to the Clerk herein, and that it was only necessary for the Clerk in that case to print the appeal papers and supervise the binding and indexing of the record. Deponent states that in the said McCreery case there was returned from the clerk to deponent a portion of the fees which had already been paid to the said Clerk, under the Supreme Court decision in Rainey vs. Grace & Co., reported in Lawyers Co-operative Publishing Company advance sheets of U. S. Reports of February 15, 1914, and deponent believes that the fees thus returned by the Clerk were returned under instructions from the Department of Justice.

Deponent believes that the circumstances in this case are so precisely similar as to come within the said Supreme Court decision, as in the case in the First Circuit.

FRED L. CHAPPELL.

Subscribed and sworn to before me this 27th day of June, 1914.

LUELLA G. GREENFIELD,

(Seal) *Notary Public in and for said County and State.*

My commission expires June 23, 1915.

Endorsed: Filed June 30, 1914. Edward M. Holloway, Clerk.

And afterwards, on the same day, to-wit: On the thirtieth ay of June, 1914, in the October Term last aforesaid, there as filed in the office of the Clerk of this Court a certain lemoranda on Motion to Retax Costs, which said Memoranda in the words and figures following, to-wit:—

UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

oshen Manufacturing Company, *Complainant-Appellant,* *vs.* lubert A. Myers Manufacturing Company, *et al.,* *Defendants-Appellees.*	In Equity No. 2027.

MEMORANDA ON MOTION TO RETAX COSTS.

Counsel for complainant-appellant is impelled to make this motion because under precisely similar circumstances the Clerk of the United States Circuit Court of Appeals at Boston refunded a portion of the fees that were taxed under the particular provision relating to the present item in question, the refund having been made by the Clerk of that Court without any protest or motion having been made by the party, in the case of McCreery Engineering Company vs. Massachusetts Fan Company, reported at 195 Fed. Rep. 498.

Counsel believes that this sum was refunded pursuant to instructions from the Department of Justice, as no motion had been made in the case, and it would not be expected that the Clerk of the Court would take up the matter of his own motion. Counsel believes it was not the act of the Clerk of the Court but the act of the Department of Justice, on the authority of the Supreme Court decision of *Rainey* v. *Grace & Co.*, where it will be noted that the particular item of costs was held not to be taxable. This decision is reported in the advance sheets of the Lawyers CoOperative Publishing Co., of February 15, 1914.

In this case in the First Circuit complainant-appellant furnished such parts of the record as were already printed and the Clerk attended to binding them together and indexing them, and printed certain portions not previously printed. We apprehend that to the extent that service was performed it should have been taken into consideration in the taxation

of costs, but from our files in this case we are unable to determine to just what extent that was taken into consideration by the Clerk of the Court. We believe it should be taken into consideration.

In the case at bar there was furnished to the Clerk of the Court the required number of complainant's printed records and of defendant's printed records, the patent copies and photograhic prints of all exhibits and the like, and the Clerk of the Court only attended to the printing of the appeal papers and the binding and indexing of the record.

Counsel for complainant-appellant therefore desires that the matter be given further consideration under the circumstances.

Respectfully submitted.

FRED L. CHAPPELL
Counsel for Complainant-Appellant.

Endorsed: Filed June 30, 1914. Edward M. Holloway, Clerk.

And afterwards, on the same day, to-wit: On the thirtieth day of June, 1914, in the October Term last aforesaid, the following further proceedings were had and entered of record, to-wit:—

Tuesday, June 30, 1914.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:

Hon. Francis E. Baker, Circuit Judge, presiding.
Hon. Julian W. Mack, Circuit Judge.
Edward M. Holloway, Clerk.
John J. Bradley, Marshal.

2027 Goshen Manufacturing Company *vs* Hubert A. Myers Manufacturing Company, *et al.* } Appeal from the District Court of the United States for the District of Indiana.

Now this day comes Mr. Fred L. Chappell, counsel for appellant, and presents a motion for a re-taxation of the costs in this cause. Thereupon, it is ordered by the Court that the same be filed and that the Clerk of this Court withhold from

is emolument return for the fiscal year ending June 30th, 914, the sum of $75.75, the supervising fee heretofore taxed n this cause, and the consideration of this motion is hereby ontinued until the October 1914 Term of this Court.

At a regular term of the United States Circuit Court of Appeals for the Seventh Circuit, begun and held in the United States Court Room, in the City of Chicago, in said Seventh Circuit on the sixth day of October 1914, of the October Term in the year of our Lord one thousand nine hundred and fourteen, and of our Independence the one hundred and thirty-ninth year.

And afterwards, to-wit: On the eighth day of October, 1914, in the October Term last aforesaid, the following further proceedings were had and entered of record, to-wit:—

Thursday, October 8, 1914.

Court met pursuant to adjournment and was opened by proclamation of crier.

Present:
Hon. Francis E. Baker, Circuit Judge, presiding.
Hon. William H. Seaman, Circuit Judge.
Hon. Christian C. Kohlsaat, Circuit Judge.
Edward M. Holloway, Clerk.
John J. Bradley, Marshal.

Goshen Manufacturing Company
2027 *vs*
Hubert A. Myers Manufacturing Company and Hubert A. Myers
} Appeal from the District Court of the United States for the District of Indiana.

Now again the motion of appellant for a re-taxation of costs in this cause in this Court comes on to be heard, and the Court now being fully advised, it is ordered that the said motion be, and the same is hereby overruled.

UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

I, Edward M. Holloway, Clerk of the United States Circuit Court of Appeals for the Seventh Circuit, do hereby certify that the foregoing typewritten and printed pages, numbered from 1 to 17, inclusive, contain a true copy of the proceedings had and papers filed (except the briefs of counsel, Defendants' Exhibit A, and the Petition for Rehearing) in the case of

Goshen Manufacturing Company

vs.

Hubert A. Myers Manufacturing Company and Hubert A. Myers.

No. 2027, October Term, 1913, as the same remains upon the files and records of the United States Circuit Court of Appeals, for the Seventh Circuit.

In testimony whereof I hereunto subscribe my name and affix the seal of said United States Circuit Court of Appeals for the Seventh Circuit, at the City of Chicago, this thirteenth day of January, A. D. 1915.

EDWARD M. HOLLOWAY

(Seal) *Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.*

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IN THE UNITED STATES COURT OF APPEALS,
FOR THE SEVENTH CIRCUIT.

GOSHEN MANUFACTURING CO.,
Complainant-Appellant,
vs.
HUBERT A. MYERS MANUFACTURING CO., and HUBERT A. MYERS,
Defendants-Appellees.

In Equity,
No. 2027.

PETITION FOR REHEARING BY COMPLAINANT-APPELLANT.

Now comes the above named complainant-appellant, the Goshen Manufacturing Co., and respectfully petitions this Honorable Court to grant a rehearing in the above entitled cause, and that the opinion and judgment of this Court filed therein on or about the 14th day of April, 1914, be set aside, and that this Court take equitable jurisdiction of this cause and proceed to pass upon the merits thereof, and in support of said petition complainant-appellant advances the following reasons:

I. The Court erred in affirming the decree of the court below, because that decree dismisses the bill on the merits, stating that the equities are with the defendants, and does not dismiss the bill for want of equitable jurisdiction. The affirmance of the decree below does not carry out the intent of the decision of this Court.

II. The Court erred in holding that the assertion of the defendants in the answer in this case, that the complainant's patent is invalid and that the defendants' structure does not infringe complainant's patent and that they have the right to continue to manufacture their hay cars, if they so desire, does not justify the award of an injunction.

III. This Court erred in refusing to take equitable jurisdiction of this cause on the facts appearing in the evidence and

in this behalf, we respectfully submit, has accepted the state ments of counsel in place of matters of proof appearing in th record.

(A). The record shows the complaint in the Elkhar County suit is the first authoritative and first written notice o communication of any kind from the defendant company to any one connected with the complainant company after the notic of infringement. This notice of infringement prevented sal of the manufactured hay cars to Nye and sale of the manufac tured hay cars to Hartzler, and the complaint alleges tha "plaintiff has been unable to sell said **articles** to persons wh would otherwise have bought them," and claims $10,000 dam age because it was **prevented** from doing the illegal and unlaw ful acts of infringement complained of in this suit. This com plaint was a communication from defendant which tells o numerous attempts to sell hay cars to various persons an claims damage because the notice of infringement defeated th attempts. This was the first knowledge complainant had o these facts. The inaccurate unsupported oral statement claimed to have been made by Peterson to Boyer were no claimed to be responsive to the notice and were insufficient.

(B). This complaint in the Elkhart County Circuit show defendants' allegation of its existing hay car business an intent to continue, and the complaint should be interprete according to the Indiana law, because that proceeding was i an Indiana state court and this proceeding is in the United States District Court for the State of Indiana, between citi- zens of Indiana. The statute law and precedents of Indiana should control.

(C). The record shows, when it is remembered that hay carrier business is a seasonable business that the business i hay carriers was not suspended, and a notice in September after shipment of hay cars in March shows a substantially continu- ous business, sufficient under the law to warrant apprehension of further trespass. There was no cessation of the business prior to September, 1910, that might not naturally very well follow from the seasonable character of the same.

(D). The record does not warrant the finding that the offering for sale of Myers patent No. 942,735 was of no conse- quence. The distant future right to these minor improvements

fifteen years hence was certainly not a marketable commodity, and the sale of the patent is referred to only in conjunction with the sale of the business or stock of hay cars, and both the defendant and any others seeking to proceed under the direction and design of Myers would be estopped under the rule of this court in

Siemens vs. Duncan, 142 Fed. Rep. 157.

(E). The record shows no inadvertence. This Court is not warranted in holding the statement in the Elkhart County Circuit to be inadvertent in the absence of any claim of inadvertence in the Court below or in this Court. This entire suit was because the efforts of defendants to sell hay cars had been defeated. Complainant should have the right to meet such claim of inadvertence, and unquestionably could have done so had it been made. See the sworn statements in the suit in the United States District Court for the District of Indiana, in Hubert A. Myers Manufacturing Co. vs. Goshen Manufacturing Co., Equity No. 11,106, on Myers patent No. 942,735.

This petition to rehear is based upon all the records and files in this case, and upon the certified copies of the bill of complaint and the decree in the case of Hubert A. Myers Manufacturing Co. vs. Goshen Manufacturing Company. No. 11,106 in the United States District Court for the District of Indiana, which are submitted herewith.

FRED L. CHAPPELL,
OTIS A. EARL,
Counsel for Complainant-Appellant.

IN THE UNITED STATES CIRCUIT COURT,
FOR THE DISTRICT OF INDIANA.

THE HUBERT A. MYERS MANUFACTURING COMPANY,
vs.
THE GOSHEN MANUFACTURING COMPANY.
} No. 11,106, In Equity.

BILL OF COMPLAINT.

Io the Honorable Judges of the Circuit Court of the United States for the District of Indiana:

The Hubert A. Myers Manufacturing Company, a corporation organized and existing under the laws of the State of Indiana, with its principal office and business located in the city of Warsaw, County of Kosciusko, Indiana, and a citizen of said State and District of Indiana, brings this its bill of complaint into this court against The Goshen Manufacturing Company, a corporation organized and existing under the laws of the State of Indiana, with its principal office and business located in the city of Goshen, County of Elkhart, in said state, and a citizen of said State of Indiana and of the District of Indiana, and thereupon your orator complains and says that:

1. Prior to the 4th day of April, A. D. 1908, Hubert A. Myers, then a citizen of the United States, residing at Goshen, in the State of Indiana, was the original, sole and first inventor of certain new and useful improvements in "Hoisting Devices," not known or used in this country and not patented or described in any printed publication in this or any foreign country before his said invention and discovery thereof and not patented or described in any printed publication in this or any foreign country more than two years prior to his application for letters patent thereon in the United States, or in public use or on sale in the United States for more than two years prior to his said application for letters patent and no application for a patent on said improvement was filed by the said Hubert A. Myers or his representatives or assigns in any country foreign to the United

States prior to his said application in the United States.

2. The said Hubert A. Myers, being the inventor of the said improvements and inventions, made application to the Honorable Commissioner of patents for letters patent thereon in accordance with the then existing Acts of Congress and complied in all respects with the conditions and requirements of the law relative thereto. Thereafter, on, to-wit, the 7th day of December, A. D. 1909, and after due procedure in accordance with the then existing Acts of Congress and the Rules of the Patent Office, letters patent of the United States, No. 942,735, in due form of law, were issued and delivered to the said Hubert A. Myers, in the name of the United States and under the seal of the Patent Office of the United States and signed by the Honorable Commissioner of Patents; and said letters patent did grant unto the said Hubert A. Myers, his heirs or assigns, for the full term of seventeen years from the 7th day of December, A. D. 1909, the full and exclusive right to make, use and vend the said improvements and inventions throughout the United States and the territories thereof, as will more fully appear from a duly certified copy of said letters patent, which your orator is ready and willing to produce when so requested.

3. Your orator further says that on the sixth day of May, A. D. 1910, the said Hubert A. Myers transferred, conveyed and assigned said letters patent No. 942,735 and all rights therein throughout the United States and the territories thereof, unto your orator, its successors and assigns, including all rights in action for past infringement of said letters patent, by a proper instrument in writing duly executed and delivered on the date above mentioned and duly recorded in the United States Patent Office, as will more fully appear from a duly certified copy of said assignment which your orator is ready and willing to produce before this Honorable Court when so requested, whereby your orator became and has continued up to the present time to be, and now is, the sole and exclusive owner of said letters patent and all rights whatever thereunder and therein throughout the United States and territories thereof.

4. Your orator has always marked and stamped the hoisting devices which it manufactured and sold under and in accordance with said letters patent with the word "Patented," together with the date of the grant of said letters patent, and has at con-

siderable trouble and expense widely advertised the existence of said letters patent and the use thereof by your orator, in its trade circulars, catalogues, letters and otherwise.

5. Your orator further says that the said defendant, The Goshen Manufacturing Company, after the said seventh day of December, 1909, and prior and continuing up to the commencement of this suit, and with full knowledge of your orator's said invention and of the existence of said letters patent and of the rights of your orator therein, unlawfully, wrongfully, and injuriously and with intent to derive profits from the manufacture, sale and use of the said patented friction gearing or transmission, to damage your orator and deprive it of the profits which it would otherwise derive from the manufacture, sale and use of said invention and the grant to others of rights for the manufacture, sale and use thereof, and without the license or consent of your orator, but against the will of your orator, did manufacture, sell and use and caused to be manufactured, sold and used and has continued and is now manufacturing, selling and using and causing to be made, sold and used, hoisting devices containing and employing the invention in hoisting devices set forth and claimed particularly in claims 2, 4, 8, 9 and 12 of said letters patent No. 942,735, and covered by said letters patent, in infringement and utter disregard of the said exclusive rights therein secured to your orator by virtue of said letters patent as hereinbefore stated.

But how many such hoisting devices the defendant has made, sold and used or caused to be made, sold and used, your orator is ignorant and cannot set forth, and avers, upon information and belief, that the defendant so manufactured, sold and used, in infringement of your orator's rights, as above set forth, a large number of said hoisting devices, and derived large profits therefrom, but to what extent your orator is ignorant and can not set forth; and your orator has been deprived of large profits by reason of the said infringement of said letters patent by the defendant and has incurred large damages thereby.

6. The said defendant was requested, after issue of said letters patent as above set forth to desist from the infringement thereof, but it has absolutely refused so to do and has denied the rights of your orator and has expressed the determination to continue the manufacture, sale and use of said infringing de-

vices; and your orator fears and has reason to fear that unless the defendant be restrained by a writ of injunction issuing out of this Honorable Court, it will continue to make, sell and use friction gearing and transmission such as is set forth and claimed in said letters patent, and will thereby cause irreparable injury to your orator's aforesaid business and exclusive rights.

7. Therefore, as your orator can have no adequate relief excepting in this court of equity, your orator prays your Honors to grant your orator a preliminary and also a permanent writ of injunction, issuing out of and under the seal of this Honorable Court, directed to the said The Goshen Manufacturing Company, and strictly enjoining it, its agents, employees and associates not to make or sell or use, nor cause to be made or sold or used any hoisting devices containing or employing the invention covered by said letters patent.

8. And your orator further prays that the defendant, by a decree of this Court, may be compelled to account for and pay over to your orator all the profits which it has derived or shall have derived from any infringement of the rights of your orators under and by virtue of said letters patent; and also that it may be decreed to pay all damages which your orator shall have incurred, on account of defendant's infringement of said letters patent; also that the defendant be decreed to pay the cost of this suit, and that your orator may have such further relief as the equity of the case, or the statutes of the United States, may require and to this Court may seem just.

9. And your orator further prays that the defendant may, if it can, show why your orator should not have the relief hereby prayed, and that it may be required according to its best knowledge, remembrance, information and belief to make a full and true answer to this bill of complaint and to each of the several matters heretofore stated and charged, fully and truly as if separately interrogated as to each of said matters, but without oath, which is hereby waived.

May it please your Honors to grant unto your orator a writ of subpoena and respondendum, issuing out of and under the seal of this Honorable Court, and directed to the said The Goshen Manufacturing Company, and commanding it to appear and make answer to this bill of complaint, and to perform and

abide by such order and decree herein as to this court shall seem just.

And your orator will ever pray.

The Hubert A. Myers Manufacturing Company.
By David A. Peterson,
President.

V. H. LOCKWOOD,
Solicitor and Counsel for Complainant.
Indianapolis, Ind.

STATE OF INDIANA, }
COUNTY OF KOSCIUSKO. } ss.

On this 23rd day of November, 1910, before me, a Notary Public in and for said County and State, personally appeared David A. Peterson, president of The Hubert A. Myers Manufacturing Company, to me well known, and made oath that he has read the foregoing bill, subscribed by him, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters which are therein stated to be based on information and belief, and that as to those matters he believes it to be true.

(SEAL) JOHN H. AIKEN,
Notary Public.

Commission expires March 17, 1913.

DISTRICT OF INDIANA,

I, Noble C. Butler, Clerk of the District Court of the United States for the District of Indiana, do hereby certify that the above and foregoing is a full, true and complete copy of the Bill of Complaint filed on the 5th day of December, A. D. 1910, in the Circuit Court of the United States for the District of Indiana, in the cause of The Hubert A. Myers Manufacturing Company v. The Goshen Manufacturing Company, as fully as the same appears of record in my office.

Witness my hand and the Seal of said Court, this 17th day of April, 1914.

NOBLE C. BUTLER,
Clerk.

DISTRICT OF INDIANA,

I, Albert B. Anderson, Judge of the District Court of the United States, for said District, do certify that at the date of the foregoing Certificate, Noble C. Butler was, and now is, the Clerk of the District Court of the United States, for said District, and that his attestations aforesaid is in due form of law.
Witness my hand, this 17th day of
April, 1914.

ALBERT B. ANDERSON,
Judge.

IN THE DISTRICT COURT OF THE UNITED STATES,
FOR THE DISTRICT OF INDIANA.
May Term, 1913, May 6, 1913,
Before the Honorable Albert B. Anderson, Judge.

THE HUBERT A. MYERS MANUFACTURING COMPANY,
v.
THE GOSHEN MANUFACTURING COMPANY.
No. 11,106,
In Equity.

Comes now the complainant by counsel, and upon its motion it is ordered by the Court that the above entitled cause be, and the same is hereby, dismissed at complainant's costs.

DISTRICT OF INDIANA,

I, Noble C. Butler, Clerk of the District Court of the United States for the District of Indiana, do hereby certify that the above and foregoing is a full, true and complete copy of an order made and entered on the 6th day of May, A. D. 1913, in said court, in the cause of The Hubert A. Myers Manufacturing Company v. The Goshen Manufacturing Company, as fully as the same appears of record in my office.
Witness my hand and the Seal of said Court,
this 17th day of April, 1914.

NOBLE C. BUTLER,
Clerk.

DISTRICT OF INDIANA.

I, Albert B. Anderson, Judge of the District Court of the United States, for said District, do certify that at the date of the foregoing Certificate, *Noble* C. Butler was, and now is, the Clerk of the District Court of the United States, for said District, and that his attestations aforesaid is in due form of law.

Witness my hand, this 17th day of April, 1914.

ALBERT B. ANDERSON,
Judge.

BRIEF ON PETITION FOR REHEARING.

Clause I. Affirmance of Decree Disposes of case on the merits. It is clearly set intended from the opinion.

Upon this petition for a rehearing we desire first of all to call attention to the decree of the Circuit Court of the District of Indiana which is before this Court for review. The decree of the district court is as follows, R. p. 197:

> "Come now the parties by their respective solicitors, and this cause having been submitted to the court upon the pleadings, testimony and exhibits, and the court having heard the argument of counsel, and duly considered the same, and being sufficiently advised in the premises, **finds that the equity of this cause is with the defendants.**
>
> It is therefore" (that is, because the equity is with the defendant) "ordered, adjudged and decreed by the court that the bill of complaint herein be, and the same is hereby, dismissed for want of equity."

The form of this decree shows that the court below took jurisdiction of the cause, considered the testimony and exhibits, and after such consideration dismissed the bill of complaint, not because it had no equitable jurisdiction but **because it found that the equities of the cause were with the defendants.** The opinion of this Court proceeds on the theory that there is a **want of equitable jurisdiction** and that for that reason the bill should be dismissed. We do not believe that the court is justified in this finding. We urge that the court should take equitable jurisdiction of this cause. But it is submitted that, in case the court does decide, this petition to the contrary notwithstanding, that there is no equitable jurisdiction, it should not affirm the decree of the court below which dismissed the bill of complaint on the ground that the "equity is with the defendants."

In its opinion the Court intimates that the complainant should have brought an action at law to enforce its rights against the defendant and that the complainant should proceed

if it so desires, to the law side of the court to try out these questions. However, with the decree, as it now stands, affirming the decree of the court below, when the complainant proceeds in an action at law to enforce its rights against the defendant, it is met with the fact that the decision of the district court which found that the equities of the causes were with the defendant has been affirmed by this Court, which would amount to an adjudication of the matter.

We respectfully request that the decree of the court below should not be affirmed, but that, if this court adheres to the opinion that there is a want of equitable jurisdiction in this cause, the case should be remanded to the district court with directions to dismiss the bill of complaint for want of equitable jurisdiction, or to proceed under the rules in such case made and provided, the new equity rules providing for a transfer of this cause to the law side of the court.

Clause II. Where defendants insist in the answer on right to continue, decisions heretofore have been uniform that the Court will take equitable jurisdiction and grant injunction.

This has to do with the claim of right to proceed with the manufacture asserted by the defendants in the answer in this case. This indicated that the defendants have not in good faith discoutinued the manufacture of the infringing device.

Complainant-Appellant's contention in this behalf is supported by the long line of decisions referred to in the Supplemental Brief on behalf of Complainant-Appellant, and considered at pages 20 to 32 inclusive. A leading text book on patents states the matter in the followng language, **Walker on Patents, Sec. 701:**

> "But the fact that the defendant has ceased to infringe the patent, and says that he will not infringe it in the future, is no reason for refusing an injunction against him. Whatever tort a man has once committed, he is likely to commit again, unless restrained from so doing."

Kennicott vs. Bain, 185 Fed. Rep. 520,

calls for a discontinuance in good faith,—see next to the last line in the first paragraph of Judge Grosscup's decision. Good faith, we submit, is contravened by a counter claim of right. See

Deere & Webber vs. Dowagiac, 153 Fed. Rep. 177,
Evans vs. Victor, 204 Fed. Rep. 361.

Further, a review of the complete record herein shows absolutely lack of good faith on the part of defendants.

Clause III. The Court should take equitable jurisdiction because the continuance in business, repeated trespasses after notice, continued offering for sale of manufactured hay cars, followed by a solemn notice, viz., the complaint in the Elkhart County libel suit, certainly would make any reasonable man apprehensive of further infringement.

In this behalf, through some strange mischance, it is feared that this Court has regarded the prayer of the bill of complaint as asking for an injunction against the **manufacturing** of the structure of the patent in suit.

The Court is respectfully reminded that the grant of a patent grants to the patentee the exclusive right (1) to make, (2) to use and (3) to vend.

Complainant was relying upon all three of these rights when it drafted the bill of complaint herein, because in prayer II of the bill, appearing at p. 7 of the record, occurs:

> "And your orator prays that said Defendants, The Hubert A. Myers Manufacturing Company and Hubert A. Myers, their servants, agents, attorneys, and workmen, and each and every of them, may be restrained and enjoined, provisionally and perpetually, by the order and injunction of this Honorable Court, from directly or indirectly
>
> (1) making, constructing or causing to be made and constructed,
>
> (2) using or causing to be used,
>
> (3) vending or causing to be vended, delivering,

working, or putting into practice, operation or use, hoisting pulleys embodying the said improvements or inventions described and claimed in the said Letters Patent * * *"

The question, then, is not, so far as jurisdiction is concerned, whether the defendant has infringed by merely **manufacturing** subsequent to the notice, but whether the defendant company has done other things, namely, used or vended, that amount to a trespass upon the patent rights of complainant. This Court says

> "since March, 1910, at the latest no infringement of complainant's rights has been committed or threatened."

Yet, this trespass in March, 1910, was nearly six months after the notice, thus showing that there was no disposition or intent to respect complainant's rights, and there is no case reported in the books where a trespass has continued after the notice (including Kennicott vs. Bain) in which the injunction has been refused.

(A) Elkhart County Complaint the first authoritative and written communication from defendant in response to complainant's notice. Says in business, enumerates repeated efforts to sell manufactured hay cars subsequent to notice of infringement, insists notice is wrongful, and that they have the right to proceed.

This court says in its opinion that the statement in the Elkhart County suit is inaccurate and is an inadvertence. In this behalf it is respectfully urged upon the Court to consider the document itself where this statement is made. It will be noted that the complaint there was because of an alleged false and malicious statement as to the rights under the Myers patent in suit. That notice is not confined to a matter of manufacture, because the notice complained of says:

> "This is a matter in which **dealers** and **farmers** who sell and **use** other cross draft hay carriers are d[illegible]

interested, as the courts hold them liable as well as the infringing manufcturer."

It will be noted that the Elkhart County complaint is not because the notice prevented the Hubert A. Myers Manufacturing Company from manufacturing, but because it prevented them from **selling** the **manufactured hay cars** to one V. L. Nye and from **selling manufactured hay cars** to one Aaron Hartzler, and that the

> "plaintiff has been unable to sell such articles to persons who would otherwise have bought them, and its business, which theretofore had produced a profit to plaintiff's stockholders of $3000.00 and more per year, has been entirely destroyed and **plaintiff has been unable to sell any of its manufactured hay cars."**

Now, it is idle to say that the plaintiff could have been prevented from doing something that it did not desire and try to do, and it appears as a consequence that this Elkhart libel complaint charges that the complainant herein by its notice had prevented the **sale** by the Myers Manufacturing Company, which it was undertaking to accomplish, of manufactured hay cars to an extent that would have profited that company in the sum of $10,000.

Up to the time of filing this Elkhart County complaint by defendant company, there had been no notice or communication from the defendant herein to the complainant in response to this notice of infringement. The only thing that is claimed to have occurred is that Mr. Peterson said to Mr. Boyer that the defendant herein was "practically dead as far as manufacturing was concerned," whereas at the same time Boyer was informed of the facts, and the facts were that Dietrich and Myers were using the defendant's plant to complete the production of structures, and that thereafter, as late as March, 1910, such structures were delivered and put into practice and operation, contrary to the second prayer of the bill of complaint.

According to Peterson's own story, see R. p. 109 in answer to direct question 23, he said:

"A. I called on Mr. Boyer twice during the early part of 1910, probably January or February, with a view to selling him the hay car patent, at which time I went over the Myers' situation and stated to him that we were **practically dead as far as manufacturing was concerned**, as we had not turned a wheel since the previous September. **Farther than this, I am unable to say that he has had any notice.**"

Now, this was not a notice that the business had been discontinued, and it made so little impression, if it ever occurred, which is doubtful, that Mr. Boyer has no recollection of it. It was not a responsive notice, and Mr. Boyer says the only thing he recollects is that Peterson said he personally was out of it.

So, it will be seen that the response to the notice of infringement was the complaint served upon Boyer immediately after the 12th day of September, 1910. This complaint conveyed to Boyer, the president of the complainant company, very important information: It conveyed the information to him that the Hubert A. Myers Manufacturng Company considered itself then in business. It further stated that they had been

" * * * prevented from making a sale of its letters patent and **manufactured hay cars** to one N. V. Nye who had offered the sum of Five Thousand Dollars therefor * * *"

It further stated

"That **thereafter** plaintiff had entered into an agreement with one **Aaron Hartzler** for the **sale** to him of **its manufactured hay cars** * * * and because of said statements and publications so made by defendant said Hartzler refused to carry out said agreement. * * *"

It further stated

"That by reason of the premises, plaintiff has been unable to sell said articles * * *"

and it also informed Mr. Boyer, the president of the complainant company, that his notice had entirely destroyed the business of the said Hubert A. Myers Manufacturng Company, and that **"plaintiff has been unable to sell any of its manufactured hay cars,"** thereby indicating that the said company was endeavoring to sell its hay cars, and claiming that it had been damaged in the sum of $10,000, because it could not do so in the teeth of the notice.

All this information was communicated for the first time, formally in writing, as the **absolute** basis of this Elkhart County suit, and was the only authoritative response received from the Hubert A. Myers Manufacturing Company. It was authoritative. Boyer had the right to rely upon it. None of the unsupported oral statements by Peterson should be of consequence in comparison with this formal document in writing, for Peterson made no representations of this kind, and he was attempting to mislead Boyer as to the facts by saying "dead as far as manufacturing was concerned," when the plant was in operaton.

(B) The allegations of Elkhart County complaint should be interpreted by the Indiana law, and are very solemn declarations of fact. Fictitious and sham pleadings forbidden.

This document, the complaint in the Elkhart County Circuit, should be construed as emanating from defendant and as evidence according to the Indiana laws and is binding upon the defendant as a statement of facts and of intent clearly emanating from them. The pleading in the Elkhart County Circuit was not sworn to, but it was a pleading between citizens of the State of Indiana, and this case at bar is a suit between citizens of the State of Indiana, in the United States District Court for the District of Indiana, before the judge of that district. The Indiana statute law and precedents should control in the interpretation of this document. Attention is therefore called to **Burns' Annotated Indiana Statute, Revision of 1908, Vol. I,** as follows, the emphasis being by counsel:

"343. (341). Complaint — Contents — —Paragraphs numbered—84. The first pleading on the part

of the plaintiff is the complaint. The complaint shall shall contain—

First. The title of the cause, specifying the name of the court and county in which the action is brought, and the names of the parties to the action, plaintiff and defendant.

Second. **A statement of the facts constituting the cause of action,** in plain and concise language, without repetition, and in **such manner as to enable a person of common understanding to know what is intended."**

"387. (381). Fictions abolished.—128. All **fictions in pleading are abolished, and their use forbidden** in the courts of justice in this state."

"391. (385). Sham pleadings.—847. An answer or **other pleading shall be rejected as sham,** either when it plainly appears upon the face thereof to be false in fact, and intended merely to delay, or when shown to be so by the answers of the party to special written interrogatories propounded to him to ascertain whether the pleading is false; and all surplusage, tautology and irrelevant matter shall be set aside and struck out of any pleadings, when pointed out by the party aggrieved."

The Indiana courts agree in holding that pleadings in other causes, whether sworn to or not sworn to, are admissible in evidence and are entitled to be considered by the jury. Evidence may be introduced to explain, modify or controvert the facts alleged in these pleadings, but **until such evidence is introduced** to modify, explain or contradict the pleadings, the facts alleged therein stand as evidence of the highest value because made in a solemn pleading filed in court.

The leading case in the state of Indiana upon this question is the case of **Boots v. Canine, 94 Indiana, 408,** which case is approved in **Wigmore on Evidence, Sec. 1066,** where the subject is authoritatively discussed and to which we respectfully refer the court. Other Indiana cases in which this rule is upheld are:

B. O. & C. R. R. Co. v. Evarts, 112 Ind. 533, 14 N. E. 369,

Holland v. Spell, 144 Ind. 561, 42 N. E. 1014,
Springer v. Drosch, 32 Ind. 486,
Cox v. Ratcliff, 105 Ind. 374,
Cleveland C. C. & St. L. R. R. v. Gray, 148 Ind. 274, 46, N. E. 675.

Pleadings in the Indiana courts are not required to be sworn to, and so far as they are a statement of fact have the same force and effect as if sworn to.

It is therefore very clear that under the law of the state of Indiana the complainant herein had the right to rely upon the complaint in the Elkhart County Circuit as a formal statement of fact, and the facts stated pointed out to the complainant herein repeated and numerous efforts to trespass upon the rights of the complainant, so far as the patent in suit is concerned, by an effort to vend hay cars about which the notice herein was served. It must be absolutely clear that, under the law of the State of Indiana between citizens of the state of Indiana, this pleading is binding, and a clear and concise statement of facts, without **sham** and without **fiction** of any kind whatsoever, on which the plaintiff therein relied to establish its case and on which complainant herein had a right to rely. And being the first formal communication in writing to anybody connected with the complainant after the notice, it was entitled to consideration and to be accepted as the reply thereto. Defendant did not acquiesce, but it declared to the complainant herein that the defendant was continuing in business, claiming the right to continue, had made repeated efforts to sell hay cars, to Nye, to Hartzler and to others, and complained that but for the wrongful notice it would have been able to sell so many that its profits therefrom would amount to $3,000 in the course of a year. Under the law of the State of Indiana complainant herein had the right to rely upon this, and did rely upon it, and acted immediately by bringing this suit.

(C) Defendants did not cease the hay car business. March was the end of shipping season and September the beginning of next season, so that to say business was suspended is untrue and misleading. Hay cars could not be installed while farmers were busy haying.

The record shows, when it is remembered that the hay carrier business is a seasonable business, that the hay carrier business of the defendant, the Hubert A. Myers Manufacturing Company, was never suspended, and that the statements made in the complaint in the Elkhart County Circuit were entirely accurate, justified, and supported by the facts.

Hay cars are certainly made for the purpose of handling hay. The court will certainly take judicial notice that haying time comes in the months of May, June, July and August; that is, during the summer months, beginning quite early in the southern part of the state of Indiana, for instance, and continuing quite late in the northern parts of Wisconsin and Michigan.

The manufacturer of hay cars must necessarily plan on distributing his product in time to be made use of during the haying season. A reference to the patent in suit, R. p. 206-212, shows quite a complex device, and a reference to the Hubert A. Myers structure, patent No. 942,735, R. p. 350, shows a complex structure, with a track C for carrying the same and various other parts. Now, this apparatus, in order that it may be properly installed in the barn, requires the services of some one who knows how, an expert, the proper modification of the rafters and supports, and the proper location and supporting of the track; also the rope will require the proper disposition of pulleys and arrangements of the same for the attachment of the horse to haul and elevate the load. It is submitted that no ordinary farmer would be able to install the apparatus. It must be installed by the dealer selling the same, and he cannot afford to hire a gang of men to install each individual hay carrier. Consequently, he must have his hay cars and track and apparatus in hand so that he can begin his selling campaign well in advance of the haying season and have the hay cars installed abundantly early to enable the farmer to make use of the same when the busy haying season comes. Shipments from the manufacturer, under such circumstances, in view of the time consumed for transportation by freight, could not well be later than the month of March for any season. March seems to be the time when these hay cars were shipped out, that is, vended, by the Hubert A. Myers Manufacturing Company. There would be no particular occasion to ship out later than

that for any considerable amount of business, because it would not be possible to do that by freight. Shipments thereafter would be small and by express and at burdensome expense. Dietrich had his cars delivered in convenient time to be marketed for the season of 1910.

The Hubert A. Myers Manufacturing Company desired to continue the business next season. So, at the beginning of that season, September, 1910, they found it desirable to make some showing. Therefore, they asserted a positive adverse right to complainant, and their response to the notice that they must discontinue the manufacture of the infringing device was a suit in the Elkhart Court, because it was claimed that that notice of infringement was defamatory and an interference with their rights. Such notice came September 12, 1910, and the bill of complaint herein, as soon as defendants had declared themselves, was filed October 3rd, 1910. There was no delay after the defiant response to the notice of infringement indicating attempts at sale. The response to the notice of complainant was certainly relied on by Mr. Boyer under the circumstances, because the delay from March, 1910, to September, 1910, was not a delay at all, since goods would not be shipped out in any considerable quantity during that period. They could not be installed for that haying season if shipped later.

(D) Defendant was attempting to sell its Myers patent; not for distant future, but in conjunction with manufactured hay cars. The suit on this patent against complainant is conclusive on this point. The claim of right was false, the bill of complaint being dismissed on motion of Myers Company counsel.

In the matter of the offer for sale of the Myers patent No. 942,735, the defendant did not offer it for sale for use during the period between the expiration of the two patents, and the Court is not warranted in saying that the patent will give the defendant or its successors in title exclusive right to make the improved carriers, and in saying that the patent prevents complainant from adopting the improvement embodied in the patent. It appears that the defendant brought suit against the complainant under this patent, the suit thereon was pending at

the same time that this suit was pending, and defendant on motion of its own counsel dismissed that suit after the complainant had been put to the trouble of putting in its defense. This appears from the certified copy of bill of complaint and of the decree attached to the petition to rehear. This shows conclusively that the ownership and the exploitation of this Myers patent No. 942,735 was simply the exploitation of a claim adverse to that of the patent in suit. It has been backed up by an infringement suit against the complainant, which we earnestly submit was brought absolutely in bad faith and without any warrant, as appears from the dismissal of the same at the cost of the said Myers Manufacturing Company on the motion of its own counsel. The findings of the Court about this Myers patent No. 942,735 show that the court has not considered that patent at all. It is simply a patent which puts into a different form of well known equivalents the things that are in complainant's patent in suit and are sued by the complainant in this case. The comparison of the structure with the structure of the patent in suit appears at R. p. 185, and "Complainant's Exhibit No. 5, Defendant's First Hay Carrier" is substantially identical wth the structure of the said Myers patent No. 942,735 appearing at R. p. 350.

The principle of law referred to in the Supplemental Brief as to the sale of this patent certainly applies. We protest that there is nothing in the record that shows that the defendant was trying to sell the patent for the period after the expiration of the patent in suit, and the allegations in the Elkhart County suit show that it was attempting to sell that patent in conjunction with its manufactured hay cars, and that it was making repeated attempts to do this. It is submitted that the conclusion of this Court is erroneous and in direct conflict with the law as laid down in the cases of

Toppan vs. Tiffany, 39 Fed. Rep. 420,
National vs. Polk, 121 Fed. Rep. 742,
Trent vs. Risdon Iron & Locomotive Works, 102 Fed. 635,
Walker on Patents, Sec. 407.

All of these cases were cited in the supplemental brief on behalf of complainant and were called to the attention of the court, and it is submitted that the court's ruling in this opinion

is in direct conflict with these authorities and is erroneous.

Anyone availing themselves of Myers' design in this behalf, which was clearly subsequent to the design of the patent in suit, would be in the position of Myers himself and estopped, according to the decision of this Court in

Siemens vs. Duncan, 142 Fed. Rep. 157.

(E) The record shows no inadvertence in Elkhart County Complaint, and defendants made no claim of inadvertence, either in this Court or in the Court below. This Court should not make such finding of its own motion. Complainant should have the right to meet the objection.

The record in this case shows no **inadvertence,** and there is absolutely no warrant for the Court to say that the allegation in the Elkhart County Circuit was completely **contradicted** by the evidence and it "must be deemed to have been an **inadvertent,** as it was an **incorrect,** statement by the attorneys." It was not an inadvertent statement in that case, and we earnestly submit that it was a correct statement and such a statement as would be expected in a plain statement of facts in the bringing of such a suit under the circumstances. It was not inadvertent because in the course of the business the Myers Manufacturing Company would ship out its supply of hay carriers for the season of 1910 in March of that year, the end of the season substantially, and it would be ready to begin business again in September for the next season. That is precisely what has occurred.

The statement referred to in the Elkhart County case is followed up by the claim of repeated efforts to sell the manufactured hay cars which were complained about in the notice of infringement, and it is claimed that but for the notice the defendant could have sold enough so that their profits would have amounted to $3,000 per year, and they claim damage to the extent of $10,000 because they have been **prevented** in their efforts to sell manufactured hay cars complained of in the notice. There could not have been any inadvertence in this statement. To say the statement is inadvertent is to say that the entire suit was inadvertent, and we submit that this is not warranted.

Further than that, the defendant, neither in the court below nor in this Court, has intimated that any statement made in the Elkhart County Circuit was inadvertent. It would be preposterous to urge such a statement in view of the facts in the case and could have been easily met. Again, the unsworn statement should be treated with the same force and effect as a sworn statement, according to the law of Indiana, but this man Peterson did swear to substantially the same facts on a subsequent date, as appears from the bill of complaint in the suit by the Hubert A. Myers Manufacturing Company vs. Goshen Manufacturing Company on the said patent 942,735, where Peterson signed the bill and made oath to the same.

On page 113 of the Record Mr. Peterson was questioned, XQ. 62, regarding the suit of the Hubert A. Myers Manufacturing Co. against the Goshen Manufacturing Co., at that time pending in the United States Circuit Court for the District of Indiana, upon the Myers' patent No. 942,735, of December 7, 1909. This bill of complaint was filed on the 5th day of December, 1910, in the Circuit Court of the United States for the District of Indiana, and upon motion of the complainant, the Hubert A. Myers Manufacturing Co. on the 6th day of May, 1913, a few days after the appeal in the case at bar was taken, the bill of complaint was dismissed at complainant's cost. The sworn complaint in this case entirely corroborates the allegations in the Elkhart County libel suit. In paragraph 4 of the bill of complaint, the Myers Manufacturing Company alleges:

> "Your orator has always marked and stamped the hoisting devices which it manufactured and sold under and in accordance with said letters patent with the word 'Patented,' together with the date of the grant of said letters patent, and has at considerable trouble and expense widely advertised the existence of said letters patent and the use thereof by your orator, in its trade circulars, catalogs, letters and otherwise."

The patent in suit in this case was granted December 7, 1909, two months after the notice of infringement by the Goshen Manufacturing Company, and hence it is apparent that the manufucturing and selling under and in accordance with

said letters patent and the marking of said devices with the word "Patented" with the date of the patent (December 7, 1909), must have occurred after the date of the notice of infringement (October, 1909), and after the time when the Myers Manufacturing Company now wrongfully insists that it ceased the manufacture and sale of these devices.

In paragraph 6 of said bill of complaint it is alleged that the defendant, the Goshen Manufacturing Company, unless restrained by the court will "cause irreparable injury to your orator's aforesaid business and exclusive rights." It is clear that this can be nothing else than an allegation that the complainant in that suit, the Myers Manufacturing Company, defendant herein, had at that time a business in the manufacture and sale of hay carriers which would be irreparably injured by the Goshen Manufacturing Co. unless it were restrained.

In paragraph 8 of the bill of complaint, the Myers Manufacturing Co. prays that the Goshen Manufacturing Co. may be decreed to pay all damages which they may have incurred on account of the alleged infringement of said letters patent. This is clearly an allegation that is only pertinent because of the existence of the business in the manufacture and sale of hay carriers, as specified in the bill.

The allegations in this bill of complaint entirely support and corroborate the allegations in the Elkhart County libel suit and it cannot be said of these allegations that they are unsworn because David A. Peterson, president of the Hubert A. Myers Manufacturing Co. made oath November 23, 1910, that the contents of this bill of complaint "is true." This was two months after the Elkhart County complaint and ten days before he swore to the answer herein.

As regards the holding that the allegations in the Elkhart County suit are "contradicted" by the evidence, it appears that we have, first, a solemn statement in a pleading in the Elkhart County suit, and, second, the sworn allegations in the bill of complaint of the Myers Manufacturing Co. against the Goshen Manufacturing Co., both of which state clearly and definitely that the Myers Manufacturing Co. was in the fall of 1910, engaged in the hay carrier business. Upon the other side, we have the unsupported testimony of Peterson that he made an oral statement to Mr. Boyer in February, 1910, that they were

"practically dead as far as manufacturing was concerned," and the testimony of Mr. Boyer shows that his recollection of this conversation was that Mr. Peterson told him that he, Peterson, was entirely out of it. It is submitted that the record does not show facts contradicting the allegation of this Elkhart County suit, and that, in view of the fact that it has not been modified, explained or contradicted, it should be received and given full evidentiary value. Furthermore, this is the only communication received by complainant and emanating from the defendants, showing the purpose and intent of said defendant.

The court in its opinion states that the allegation in this libel suit is not an allegation of intent but of existing fact. The complaint says "is now and has been * * * engaged in the business of manufacturing hay cars." Furthermore, the alleged cause of action stated in the complaint itself is because of the embarrassment caused to the defendants herein in their efforts to continue their infringing business due to the notice of infringement published by the Goshen Manufacturing Company and the prevention of attempted sales of hay cars.

Remember, the hay carrier business is a seasonable business, and that the manufacturer ordinarily would ship out its hay cars as early as March for the season's business. Attention is directed to all the testimony in the case bearing on the subject of the discontinuance of manufacture.

On page 81 of the record Mr. Boyer testifies in answer to XQ. 39:

> "XQ. 39. Did they stop manufacturing and selling hay carriers soon after that?
>
> A. I can't answer that definitely whether they did or not. I was informed that the company got into trouble among themselves, and bought Mr. Myers out. After that, I was informed that a man by the name of Dietrich and Myers made up all the stock that they then had on hand, but whether they quit entirely after that I am not fully informed. You will understand that this is hearsay evdience.
>
> XQ. 40. Didn't you know that the Defendant company quit manufacturing hay carriers the latter part of 1909, and hadn't manufactured any since that time?

A. I did not. On the contrary, I have seen a statement somewhere to the effect that they acknowledged they were manufacturing in 1910, if my memory serves me correct. I think I am correct.

XQ. 41. Where did you see the statement you refer to?

A. I think I saw it in some of the pleadings."

On page 82 of the record, Mr. Boyer testified on March 29, 1911, in answer to X.Q 43:

"XQ. 43. Did you and Mr. Peterson ever talk about the matter?

A. Mr. Peterson came to Goshen and wanted to sell the whole business to me.

XQ. 44. When was that?

A. I think it was about a year ago. Am unable to give any positive date at this time.

XQ. 45. Did you understand at that time that they were manufacturing hay carriers, or that they had quit the manufacture of hay carriers?

A. As I remember, on one of the occasions, Mr. Peterson told me that **he** had sold the whole business and was entirely out of it.

* * * * * * *

XQ. 48. In your interviews with Mr. Peterson at that time, did you understand that the defendant company was then manufacturing hay carriers or that it had quit business?

A. Mr. Peterson, as above stated, told me on one occasion that **he** was entirely out of it. That was when he was negotiating the sale. I can't remember definitely what he did say. I might say, the statement that **he** was entirely out of it made an impression so that I remembered it as **I congratulated him on his good fortune."**

From this it appears that early in 1910, January or February, Mr. Peterson told Mr. Boyer that **he, Mr. Peterson,** was entirely out of it. This was not a statement that the Myers

Manufacturing Co. had ceased to manufacture or sell hay carriers or intended so to do. At R. p. 109, Mr. Peterson testifies in answer to XQ. 23:

> "XQ. 23. State whether or not Mr. Boyer or any one connected with the Goshen Manufacturing Company ever learned that the Hubert A. Myers Manufacturing Company had ceased to manufacture hay carriers, and if so, state when and how such information was gained by them.
>
> Mr. Chappell: Objected to as immaterial and not competent, and as calling for hearsay testimony.
>
> A. I called on Mr. Boyer twice during the early part of 1910, probably January or February, with a view to selling him the hay car patent, at which time I went over the Myers' situaton and stated to him that we were practically dead as far as the manufacturing was concerned, as we had not turned a wheel since the previous September. Farther than this, I am unable to say that he had any notice."

This is the only evidence in the record tending to show any knowledge on the part of the Goshen Manufacturing Company, or Mr. Boyer, regarding the condition of the Myers Manufacturing Co. and whether or not they were manufacturing infringing hay carriers. Taken at its best this evidence merely goes so far as to state that Mr. Peterson, unofficially in a personal visit with Mr. Boyer, told him that they "were practically dead as far as the manufacturing was concerned." This was in January or February, 1910. At this time, to Mr. Boyer's knowledge, the defendant plant was busily engaged in turning out hay carriers. Six months later this complaint in the Elkhart County Circuit Court was filed alleging that they were doing business, and is the only written communication to complainant in response to its notice.

Myers himself testified that there was no decision not to manufacture. See his testimony at XQ. 40, R. p. 100. Mr. Myers said:

"It was not the decision of the company at that time to abandon manufacture of hay cars,"

and in answer to XQ. 41 he explained that Peterson was negotiating and he understood afterward that the deal did not materialize owing to differences. Other witnesses not actively connected wth the defendant company testified loosely on this subject. Mr. Kinsey was interested but took no active part and said in answer to Q. 11, R. p. 123:

"A. Well, there was not any manufactured after this bunch that I speak of that was gotten out in 1900."

He seemed to think that there was only an effort to sell the patent to Hartzler and Nye. His information would be hearsay anyway. This testimony did not contravene but supports the allegation in the complaint in the Elkhart County libel suit.

It is submitted that Mr. Boyer was entitled to take the allegation in this complaint as true, in view of the fact that it was the only direct communication regarding the condition of the Myers Manufacturing Company which he had received from that Company. It seems clear that when a person is served with a pleading filed in a court of justice he should be entitled to take the allegations of that pleading as true and a definite communication from that party as to its intentions, and not be required to turn detective and go out seeking to find out whether the pleaders were telling the truth or lying when they made their allegation.

But the facts referred to show that Boyer's information was such that he would have every reason to believe that the statements were true and would not be put upon inquiry to correct them. It is earnestly submitted that there was no inadvertence in the complaint in the Elkhart County libel suit, and that the statements of facts therein are abundantly supported by the facts appearing in the record.

CONCLUSION.

It is submitted that should the Court refuse to take equitable jurisdiction, it should not merely affirm the decree of the

Court below but should order that the bill should be dismissed, not for want of equity but for want of equitable jurisdiction. The decree as it now stands dismisses the bill because the equities are with the defendants. This would amount to an adjudication of its merits and would prevent a suit at law.

The Court should, however, take equitable jurisdiction. There is no case reported where an infringer who insisted upon his right to continue and made that allegation in his answer to the bill was not enjoined. An injunction under such circumstances has been granted in every instance because of the menace to the patent right.

The record in this case, however, shows not only the claim of right in the answer, but the only written response to complainant's notice of infringement is the allegation in the libel suit to the effect that the defendant "is now and has been engaged" in the business complained of, and has made repeated attempts to sell its manufactured hay cars, naming parties specifically, as Nye and Hartzler and others, so that its business, the profit of which had theretofore amounted to $3,000 per year, was interfered with and a claim was made for $10,000 because "plaintiff had been unable to sell" the manufactured hay cars in the face of the notice.

It is submitted that to say that the assertion of the defendant that it was in the hay carrier business was inadvertent is to say that the entire suit was inadvertent, because it is the foundation of that suit.

The question of inadvertence should not be raised for the first time in this Court by the Court on its own suggestion. If it was to be insisted that there was inadvertence, it should have been urged by the defendant in the Court below at a time when the complainant could meet the objection by further proofs, and the question should not be raised in the appellate court for the first time. That the charge of inadvertence could have been met is very clear because Peterson swore to the bill of complaint in the patent suit, alleging the same facts in detail and relying upon them in a bill setting up a false claim of infringement against the complainant,—confessedly false because the bill was dismissed at the cost of the said Myers Manufacturing Company on motion of its own counsel. This shows that the claim of this right of manufacturing under the Myers

patent No. 942,735 of December 7, 1909, was malicious and false and with a view to mislead any interested party into violating the rights of complainant in the patent in suit.

It was the duty of the complainant herein to notify the public of its patent rights. The statute requires that the patent date be marked on patented goods, and complainant was clearly within its rights in giving the general public notice of its claims. Defendants never gave a response to the notice of infringement until nearly a year thereafter, had continued the infringement after the notice by **vending 200 of its manufactured hay cars** to Dietrich, completing the manufacture of the same in its plant and delivering the same at the close of the season of 1910, viz., in March, 1910, to be put into the barns of farmers for use in haying that year. In September of that year 1910, the time to begin the next season's manufacture, defendant served notice that it was still in the business and declared its repeated efforts to sell the cars in the meantime.

The Court is not entitled to cancel this proof because inadvertent without timely objection, sustained by the evidence, that inadvertence had been made by the defendant. This was not merely a statement of existing facts, it was a defy and a threat made in the most spectacular and aggravated form from a public forum. The defendants in this case are not in the class of drunken sailors. They have able counsel employed to represent them in the Elkhart County Circuit and in this court. If an objection of this kind that could be met by evidence was to be raised, it should have been raised at such time that it could be met. There should be evidence on which to base such a claim. Had this objection been made in the Court below, the further sworn statement in the bringing of the suit on the Myers later patent could certainly have been submitted to this Court, and inadvertences certainly should not be considered to repeat themselves at this rate. The facts support the statements made in the Elkhart County libel suit. This Court is not authorized to disregard the same as inadvertent, as it has done in the opinion herein.

The complaint in the Elkhart County libel suit was intended as a communication and response to the notice of infringement. It was the authoritative, spectacular response intended to be as damaging as possible. It must have been

deliberately done. It was eminently calculated to secure action from the complainant or a complete backing out as to its claim, and could not well have been put in a more offensive and belligerent way. It was at once accepted as a serious communication on which the complainant herein had the absolute right to rely, and the truth of it, as to whether or not the defendant was in business or as to whether or not the defendant had offered its manufactured hay cars for sale, was of no consequence because the same was an authoritative assertion, on which, we submit, the complainant had absolutely the right to rely and the defendant should be estopped to dispute it. This court, we submit, is not entitled to wipe out this spectacular threat by simply saying that it is an incorrect or even that it is an inadvertent statement.

The spectacular statement was surely a threat of continued infringement upon complainant's rights. The defendant had its patterns and tools, could obtain castings from any little foundry, and assemble the structures almost anywhere at will. In fact, the goods could be readily produced on order by almost any plant that had a foundry in connection.

The defendant by harping upon the discontinuance of its manufacture and plant, has misled the Court. It may have discontinued its plant, but it showed no disposition to discontinue the business of causing these goods to be further put in the market. It had been the constant effort of defendants to do this. Two hundred hay cars had been vended after the notice. Many had been manufactured and marked with the date of a patent later than the notice, and the dispositon to vend, to use, and to cause others to vend and use, certainly cannot be denied with any regard whatsoever for the proofs in this case.

A patent grants the exclusive right to make, use and vend. The suspension of manufacture is not a suspension of vending nor a suspension of using, or of procuring others so to do, and the special patterns and tools are in the possession of defendant. Defendant says authoritatively that it is attempting to sell them and to sell hay cars and to sell its supposed right to manufacture in that behalf.

A rehearing is therefore most respectfully urged, so that this case can be considered on its merits, and it is urged that

an injunction and an accounting of profits and damages should be awarded.

Respectfully submitted.

FRED L. CHAPPELL,
OTIS A. EARL,
Counsel for Complainant-Appellant.

UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

I, Edward M. Holloway, Clerk of the United States Circuit Court of Appeals for the Seventh Circuit, do hereby certify that the foregoing printed pages numbered from 1 to 33 inclusive, contain a true copy of the Petition for Rehearing by Complainant Appellant and Brief in Support Thereof, filed herein on the eighth day of May 1914 in the case of

Goshen Manufacturing Company

vs.

Hubert A. Myers Manufacturing Company and Hubert A. Myers.

No. 2027, October Term 1913, as the same remains upon the files and records of the United States Circuit Court of Appeals for the Seventh Circuit.

In testimony whereof I hereunto subscribe my name and affix the seal of said United States Circuit Court of Appeals for the Seventh Circuit, at The City of Chicago, this thirteenth day of January A. D. 1915.

(Seal)

EDWARD M. HOLLOWAY,
Clerk of United States Circuit Court of Appeals for the Seventh Circuit.

UNITED STATES OF AMERICA, *ss:*

[Seal of the Supreme Court of the United States.]

The President of the United States of America to the Honorable the Judges of the United States Circuit Court of Appeals for the Seventh Circuit, Greeting:

Being informed that there is now pending before you a suit in which Goshen Manufacturing Company is appellant and Hubert A. Myers Manufacturing Company and Hubert A. Myers are appellees, which suit was removed into the said Circuit Court of Appeals by virtue of an appeal from the District Court of the United States for the District of Indiana, and we, being willing for certain reasons that the said cause and the record and proceedings therein should be certified by the said Circuit Court of Appeals and removed into the Supreme Court of the United States, Do hereby command you that you send without delay to the said Supreme Court, as aforesaid, the record and proceedings in said cause, so that the said Supreme Court may act thereon as of right and according to law ought to be done.

Witness the Honorable Edward D. White, Chief Justice of the United States, the fourth day of February, in the year of our Lord one thousand nine hundred and fourteen.

JAMES D. MAHER,
Clerk of the Supreme Court of the United States.

UNITED STATES OF AMERICA,
Seventh Circuit, ss:

In obedience to the command of the foregoing writ of certiorari and in pursuance of the stipulation of the parties, a full copy of which is hereto attached, I do hereby certify and return that the transcript of the record filed with the application to the Supreme Court of the United States for a writ of certiorari in the case of Goshen Manufacturing Company, appellant, vs. Hubert A. Myers Manufacturing Company and Hubert A. Myers, appellees, is a full, true and complete transcript of the record upon which said cause was heard in the United States Circuit Court of Appeals for the Seventh Circuit, together with all proceedings in said Court.

In testimony whereof, I hereunto subscribe my name and affix the seal of said United States Circuit Court of Appeals for the Seventh Circuit, at the City of Chicago, this twenty-third day of February, A. D. 1915.

[Seal of the United States Circuit Court of Appeals, Seventh Circuit.]

EDWARD M. HOLLOWAY,
Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.

[Endorsed:] File No. 24,526. Supreme Court of the United States, October Term, 1912. No. 782. Goshen Manufacturing Company vs. Hubert A. Myers Manufacturing Company and Hubert A. Myers. Writ of Certiorari. Filed Feb. 23, 1915. Edward M. Holloway, Clerk.

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United States Circuit Court of Appeals for the Seventh Circuit.

No. 2027.

GOSHEN MANUFACTURING COMPANY, Appellant,
vs.
HUBERT A. MYERS MANUFACTURING COMPANY and HUBERT A. MYERS, Appellees.

Stipulation.

It is hereby stipulated and agreed that the certified copy of the record with the petition for writ of certiorari on file in the Supreme Court may be taken as the return by the Clerk of the Circuit Court of Appeals to the writ of certiorari and that the Clerk may return a certified copy of this stipulation in lieu of another record.

FRED L. CHAPPELL,
Counsel for Appellant (Petitioner).
V. H. LOCKWOOD,
Counsel for Appellees (Respondents).

[Endorsed:] 782/24526. No. 2027. United States Circuit Court of Appeals for the Seventh Circuit. Goshen Manufacturing Co., Appellant, vs. Hubert A. Myers Manufacturing Company and Hubert A. Myers, Appellees. Stipulation. Filed Feb. 23, 1915. Edward M. Holloway, Clerk. Chappell & Earl, Attorneys and Counselors, Suite 37-42 Chase Block, Kalamazoo, Michigan.

[Endorsed:] File No. 24,526. Supreme Court U. S., October Term, 1914. Term No. 782. Goshen Manufacturing Co., Petitioner, vs. Hubert A. Myers Manufacturing Company and Hubert A. Myers. Writ of Certiorari and Return. Filed February 26, 1915.